HCD-C50/C50U

SERVICE MANUAL

US Model
HCD-C50U
Canadian Model
AEP Model
UK Model
E Model
Australian Model
PX Model
HCD-C50

HCD-C50/C50U are the CD player and stereo deck receiver in FH-C5X and MHC-C50.

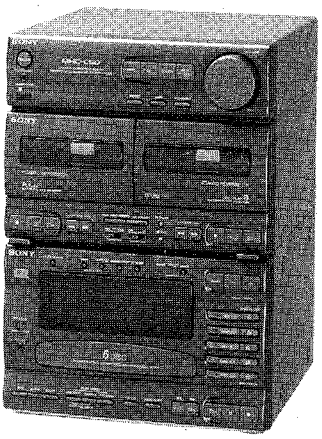


Photo : HCD-C50 (AEP model)

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY" and the double-D symbol ꟿ are trademarks of Dolby Laboratories Licensing Corporation.

CD SECTION	Model Name Using Similar Mechanism		CDP-H3750
	CD Mechanism Type		CDM23-5BD3
	Base Unit Type		BU-5BD3
TAPE DECK SECTION (C50)	Model Name Using Similar Mechanism		HCD-H61/H61M
	Tape Transport Mechanism Type	DECK-A	TCM-190RA12A
		DECK-B	TCM-190RB22A
TAPE DECK SECTION (C50U)	Model Name Using Similar Mechanism		HCD-H51/H51M
	Tape Transport Mechanism Type		TCM-210W3

SPECIFICATIONS

Tuner/Amplifier/CD player/Cassette deck (HCD-C50)

Tuner Section

System	FM stereo, AM superheterodyne tuner
FM tuner section	
Tuning range	
EE model :	65 — 74 MHz 87.5 — 108 MHz
Except EE model :	87.5 — 108 MHz
Antenna terminals	75 ohms unbalanced
Intermediate frequency	10.7 MHz
AM tuner section	
Tuning range	
G model :	AM: 531 — 1,602 kHz
IT model :	AM: 522 — 1,611 kHz
AEP, UK, EE model :	MW: 531 — 1,602 kHz LW: 153 — 279 kHz
US, CND model :	531 — 1,710 kHz (at 9kHz step) 530 — 1,710 kHz (at 10kHz step)
E, EA, AUS, SP, PX model :	MW 531 – 1,602 kHz (at 9 kHz step) MW 530 – 1,710kHz (at 10kHz step) SW 5.95 – 17.9MHz
Antenna	AM loop antenna, External antenna terminals
Intermediate frequency	450 kHz

— Continued on next page —

COMPACT DISC DECK RECEIVER

SONY®

MICROFILM

Amplifier Section

AEP, UK, EE, G, IT model :
Continuous RMS power output

	30 + 30 watts (6 ohms at 1 kHz, DIN) 36 + 36 watts (6 ohms at 1 kHz, 5% THD)
Music power output	40 + 40 watts (6 ohms at 1 kHz, 10% THD)
Inputs	MIX MIC (minijack): sensitivity 1 mV, impedance 10 kilohms PHONO IN (phono jacks): sensitivity 5 mV, impedance 47 kilohms MD IN (phono jacks): sensitivity 250 mV, impedance 47 kilohms
Outputs	HEADPHONES (stereo minijack): accepts headphones of 8 ohms or more SPEAKER: accepts speakers of 6 to 16 ohms MD OUT (phono jacks): voltage 250 mV, impedance 2 kilohms

US, CND model :
Continuous RMS power output

	25 + 25 watts (6 ohms at 80 Hz — 20 kHz, 1% THD)
Inputs	VIDEO IN (phono jacks): sensitivity 250 mV, impedance 47 kilohms MD IN (phono jacks): sensitivity 250 mV, impedance 47 kilohms
Outputs	HEADPHONES (stereo minijack): accepts headphones of 8 ohms or more SPEAKER: accepts speakers of 6 to 16 ohms VIDEO OUT (phono jacks): voltage 250 mV, impedance 1 kilohm MD OUT (phono jacks): voltage 250 mV, impedance 1 kilohm

E, EA, AUS, SP, PX model :
Continuous RMS power output :
36 + 36 watta (6 ohms at 1kHz, 5% THD)
Peak music power output : 300 watts

Inputs	MIX MIC (minijack): sensitivity 1 mV, impedance 10 kilohms MD/VIDEO IN (phono jacks): sensitivity 250 mV, impedance 47 kilohms
Outputs	HEADPHONES (stereo minijack): accepts headphones of 8 ohms or more SPEAKER: accepts speakers of 6 to 16 ohms MD/VIDEO OUT: voltage 250 mV, impedance 2 kilohms

Cassette Deck Section

Recording system	4-track 2-channel stereo
Frequency response (DOLBY NR OFF)	
	40 — 13,000 Hz (±3 dB), using TYPE I cassette (Sony HF-S) 40 — 14,000 Hz (±3 dB), using TYPE II cassette (Sony UX-S)
Wow and flutter	0.1% WRMS ±0.3% (DIN)

CD player Section

System	Compact disc digital audio system
Laser	Semiconductor laser
Wavelength	780 — 790 nm

General

Desitination	Power requirements	Power consumption
AEP, EE, G, IT model	220 — 230 V AC, 50/60Hz	100W
UK model	240 V AC, 50Hz	100W
AUS model		
E, EA, SP, PX model	110 —120/ 220 —240 V AC, adjustable, 50/60Hz	100W
US model	120V AC, 60Hz	80W
CND model		90W

Dimensions	Approx. 225 x 330 x 320 mm ($8^{7}/_{8}$ x 13 x $12^{5}/_{8}$ in.) (w/h/d) incl. projecting parts and controls
Weight	Except SP model : Approx. 8.9 kg SP model : Approx. 9.1 kg
Supplied accessories	Remote Commander (1) Sony SUM-3 (NS) batteries (2) AM loop antenna (1) FM antenna (1) Speaker cord (2) (Except AEP, UK, EE, G, IT model)

Note

EE : East European model
EA : Saudi Arabia model
G : German model
IT : Italian model
SP : Singapore model
CND : Canadian model
AUS : Australian model

SAFETY-RELATED COMPONENT WARNING!!

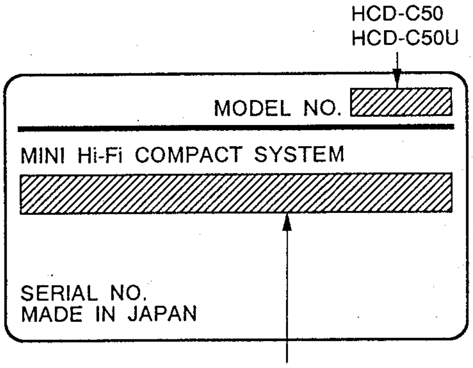
COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

MODEL IDENTIFICATION

— SPECIFICATION LABEL —



AEP, East European, German,
Italian model : AC 220 — 230V ~, 50/60Hz, 100W
UK model : AC 240V, 50Hz, 100W

E, Saudi Arabia, Singapore
PX model : AC 110 — 120, 220 — 240V, 50/60Hz, 100W
Australian model : AC 240V, 50Hz, 100W
US model : 120V, 60Hz, 80W
Canadian model : 120V, 60Hz, 90W

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

The following caution label is located inside the unit.

CAUTION ;	INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
ADVARSEL ;	USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO! ;	AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA LASERSÄTEILYLLE.
VARNING ;	LASERSTRÅLING NÄR DENNA DEL ÄR OPPNAD OCH SPÄRREN ÄR URKOPPLAD.
ADVARSEL ;	USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

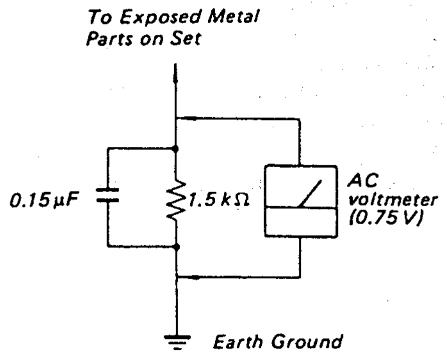


Fig. A. Using an AC voltmeter to check AC leakage.

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SECTION 1
SERVICING NOTE

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

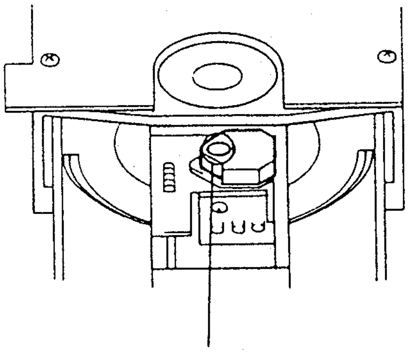
The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

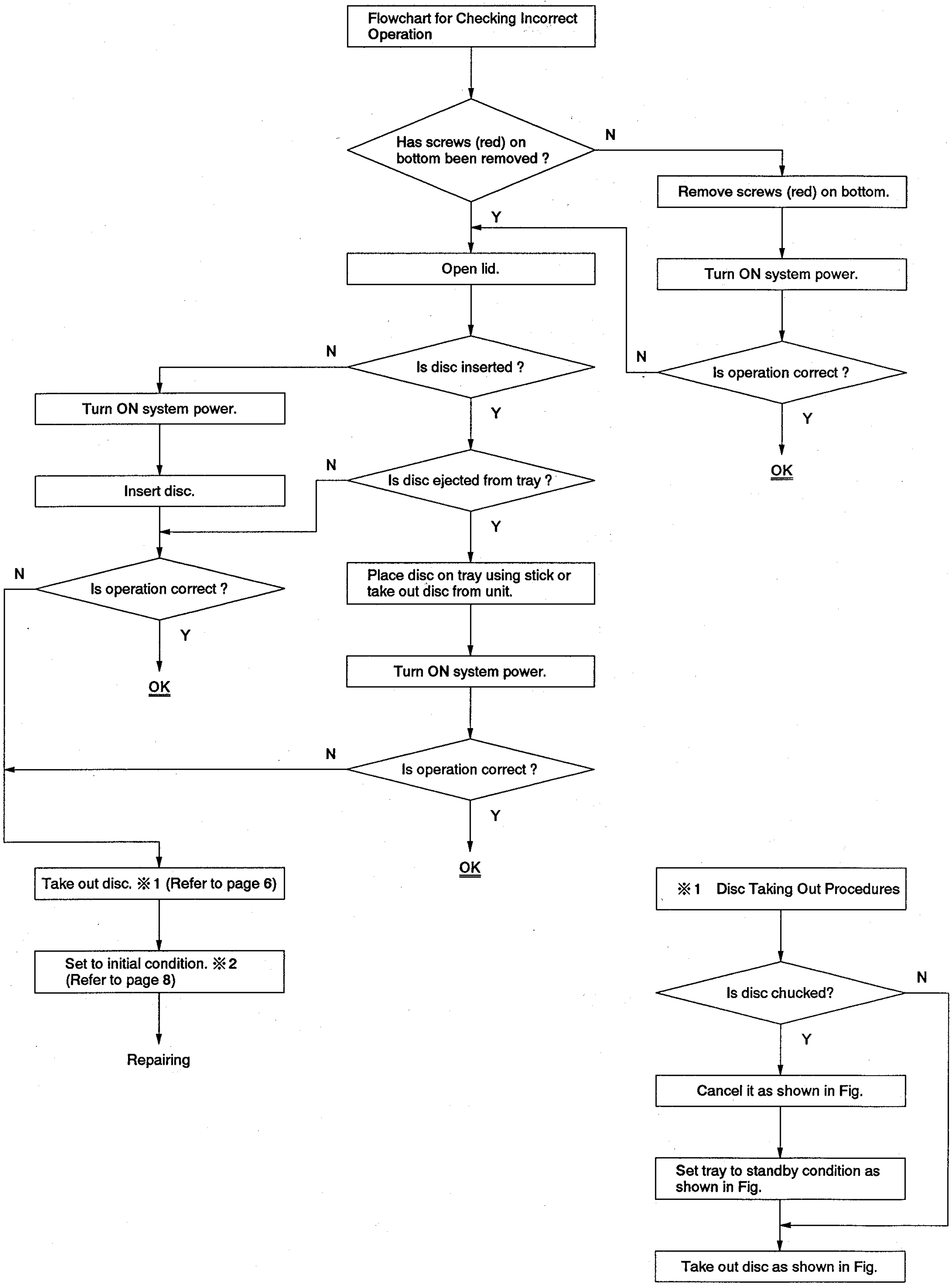
The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe more than 30 cm away from the objective lens.

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

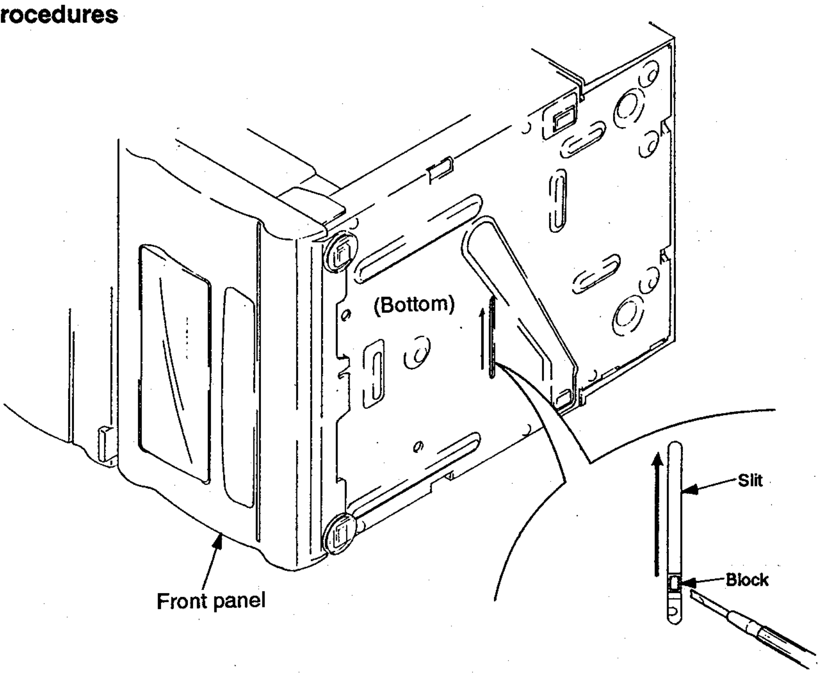
1. Make POWER switch on with no disc inserted and disc table closed.
2. Confirm that the following operation is performed while observing the objective lens.



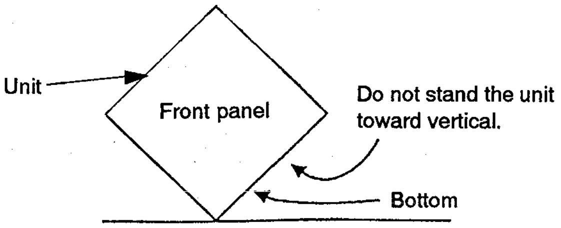
❶ Confirm that laser beam is spread.
❷ Up and downmotion of the objective lens. (3 times)


Flowchart for Checking Incorrect Operation
Has screws (red) on bottom been removed ?
N
Remove screws (red) on bottom.
Turn ON system power.
Is operation correct ?
N
Y
OK
Y
Open lid.
Is disc inserted ?
N
Turn ON system power.
Insert disc.
Y
Is disc ejected from tray ?
N
Is operation correct ?
N
Y
OK
Y
Place disc on tray using stick or take out disc from unit.
Turn ON system power.
Is operation correct ?
N
Y
OK
Take out disc. ※1 (Refer to page 6)
Set to initial condition. ※2 (Refer to page 8)
Repairing
※1 Disc Taking Out Procedures
Is disc chucked?
N
Y
Cancel it as shown in Fig.
Set tray to standby condition as shown in Fig.
Take out disc as shown in Fig.

Disc Taking Out Procedures

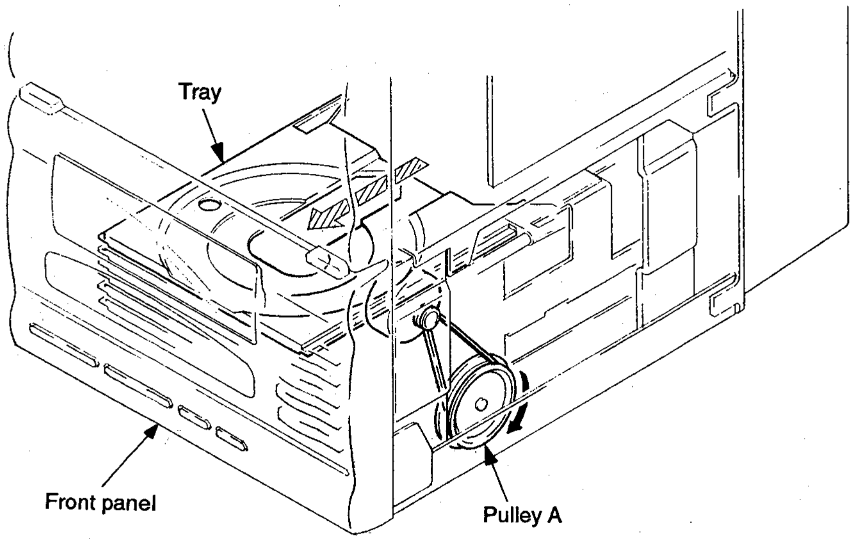

(Bottom)
Slit
Block
Front panel

1) Insert a thin stick into the hollow of the white block and move it in the arrow direction.
   (When a disc is chucked, handle the unit as follows to avoid disc removal.)


Unit
Front panel
Bottom

Do not stand the unit toward vertical.

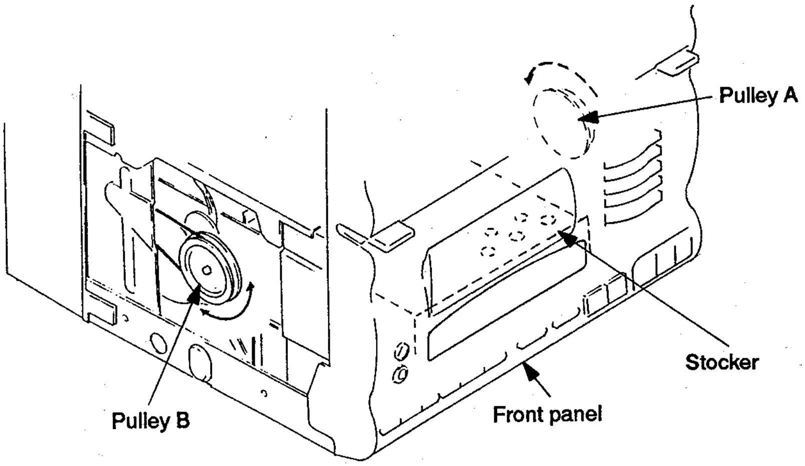
2) Turn the pulley A in the arrow ↻ direction and make sure that the disc tray moves in the arrow ⇦ direction. And further turn the pulley A until the tray aligns with other trays.


Tray
Front panel
Pulley A

3) Open the front panel lid. Turn the pulley B to allow the stock, which has the disc tray, to go up and down until the disc inserted tray aligns with the front panel lid position .

4) Turn the pulley A in the arrow ○ direction to allow the disc inserted tray to be ejected. Take out the disc and turn the pulley A in the reverse direction to allow the disc inserted tray to align with other trays.

In case two or more trays have discs, repeat step 3) and 4).



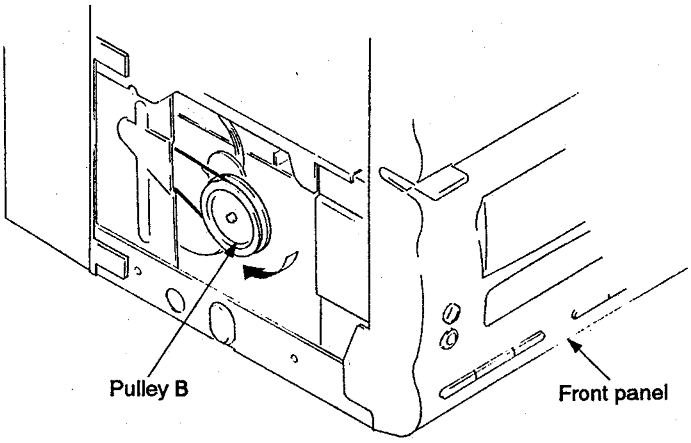
※2 Initial setting procedures

1) In case turning ON the system power supply allows the mechanism to work:
Fist, make sure that all discs have been taken out.

Open the disc No.1.
↓
Turn OFF the system power supply.
↓
Make sure that "OFF" appears on the CD display.
↓
Blinking and character disappearing indicates setting completion.

2) In case turning ON the system power supply does not allow the mechanism to work:
Move the disc tray as shown in Fig.

Initial Setting Procedures



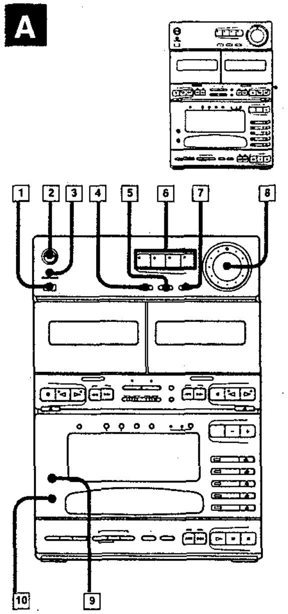
※ Make sure that all trays are in the correct positions. Turn the pulley B in the arrow direction until it stops.

SECTION 2
GENERAL

This section is extracted from instruction manual.

Parts Identification

A

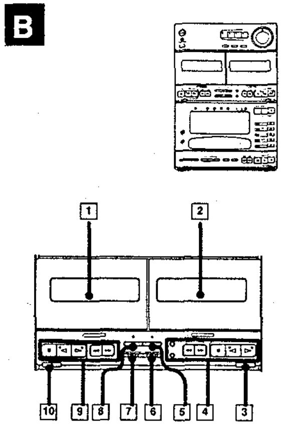


Amplifier Section A

1 Remote control sensor
2 POWER ON/STANDBY button
3 HEADPHONES jack (stereo minijack)
4 PRESET button
5 DBFB (Dynamic Bass Feedback) button

6 Function buttons and indicators
  TAPE
  CD
  TUNER
  MD/PHONO
7 SURROUND button
8 VOLUME control
9 MIC (microphone) LEVEL control
10 MIX MIC (microphone) input jack (minijack)

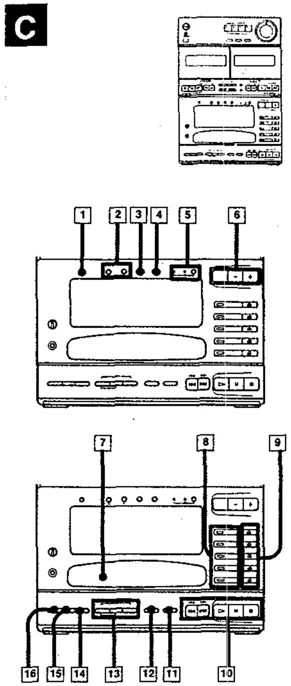
B



Cassette Deck Section B

1 Cassette holder (Deck A)
2 Cassette holder (Deck B)
3 ≜ Eject button (Deck B)
4 Tape operation buttons (for Deck B)
  ■: Stop button
  ▷: Forward play button and indicator
  ◁: Reverse play button and indicator
  AMS ◀◀▶▶: Fast winding buttons
  ‖ PAUSE: Pause button and indicator
  ● REC: Recording button and indicator
5 CD SYNCHRO button and indicator
6 DOLBY NR (Dolby Noise Reduction) selector
7 DIRECTION mode selector
8 HIGH SPEED DUBBING button and indicator
9 Tape operation buttons (for Deck A)
  ■: Stop button
  ▷: Forward play button and indicator
  ◁: Reverse play button and indicator
  AMS ◀◀▶▶: Fast winding buttons
10 ≜ Eject button (Deck A)

C

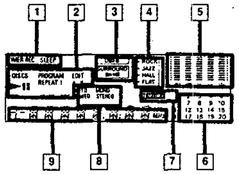


Tuner/CD Player Section C

Tuner
1 CLOCK DISPLAY button
2 CLOCK SET buttons
  TIMER button
  TIMER REC button
3 MEMORY/NEXT button
4 ST/MONO button
5 MODE button
  TUNING indicator
  PRESET indicator
6 PRESET/TIMER buttons
  BAND button
  –/+ buttons

CD Player
7 Disc tray door
8 DISC 1 — 5 selectors and disc tray indicators
9 OPEN/CLOSE ≜ buttons
10 CD operation buttons
  ■: Stop
  ‖: Pause
  ▷: Play
  ⧏◁◀◀·▶▶▷⧐: Manual search (When kept pressed)/Automatic Music Sensor (When pressed)
11 MUSIC SCAN button
12 REPEAT button
13 PLAY MODE buttons
  CONTINUE button
  SHUFFLE button
  PROGRAM button
14 CLEAR button
15 CHECK button
16 EDIT button

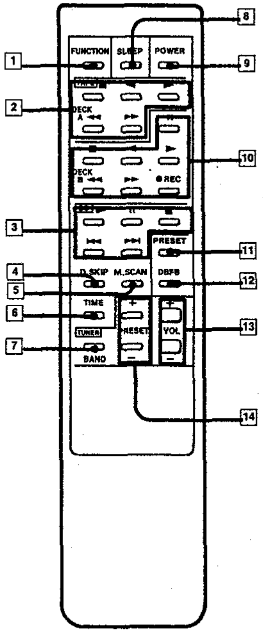
D



Display Window D

1 Timer indications
2 CD playing/editing mode indications
3 DBFB/SURROUND on/off indications
4 Sound Field Coordinator display
  ROCK
  JAZZ
  HALL
  FLAT
5 Spectrum analyzer display
6 CD selection numbers display
  Preset station number display
7 MEMORY indication
8 Tuner indication
9 Preset menu/Tuner/Timer/CD player display

E



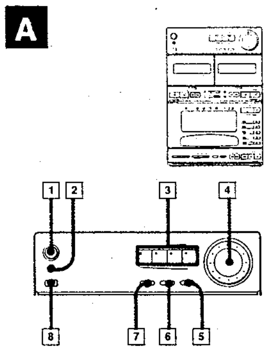
Remote Commander E

1 FUNCTION button
2 Cassette deck operation buttons (for Deck A)
3 CD operation buttons
4 D. SKIP button
5 M. SCAN button
6 TIME button
7 BAND button
8 SLEEP button
9 POWER button
10 Cassette deck operation buttons (for Deck B)
11 PRESET button
12 DBFB button
13 VOL +/– buttons
14 PRESET +/– buttons

Parts Identification

Refer to the pages indicated in ( ) for use of the buttons.

A

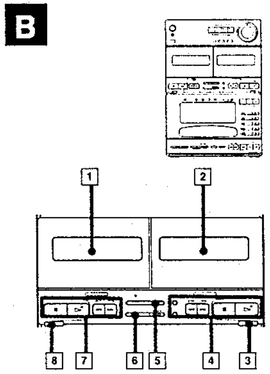


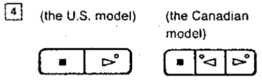
Amplifier Section A

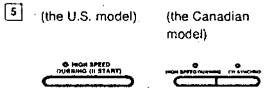
1 POWER ON/STANDBY button
2 HEADPHONES jack (stereo minijack)
3 Function buttons and indicators
   MD/VIDEO
   TAPE
   CD
   TUNER
4 VOLUME control
5 SURROUND button
6 DBFB (Dynamic Bass Feedback) button

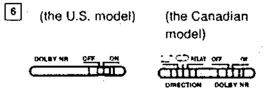
7 PRESET button
8 Remote control sensor

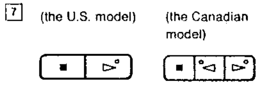
B



4

(the U.S. model)
(the Canadian model)

5

(the U.S. model)
(the Canadian model)
HIGH SPEED DUBBING (II START)

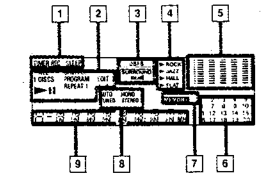
6

(the U.S. model)
(the Canadian model)
DOLBY NR
OFF
ON
DIRECTION
DOLBY NR

7

(the U.S. model)
(the Canadian model)

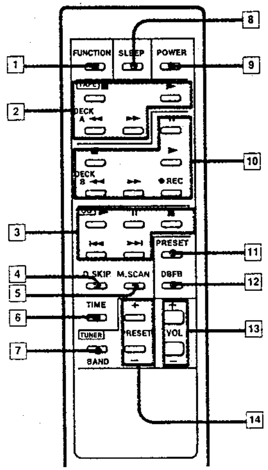
Cassette Deck Section B

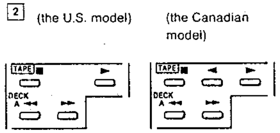
1 Cassette holder (Deck A)
2 Cassette holder (Deck B)
3 ⏏ Eject button (Deck B)
4 Tape operation buttons (for Deck B)
   ■: Stop button
   ▷: Play button and indicator
   AMS ◀◀▶▶: Fast winding buttons
   ❚❚ PAUSE: Pause button and indicator
   ●REC: Recording button and indicator
   (For the Canadian model only)
   ◁: Reverse play button and indicator
5 HIGH SPEED DUBBING button and indicator
   (For the Canadian model only)
   CD SYNCHRO button and indicator
6 DOLBY NR (Dolby Noise Reduction) selector
   (For the Canadian model only)
   DIRECTION mode selector
7 Tape operation buttons (for Deck A)
   ■: Stop button
   ▷; Play button and indicator
   AMS ◀◀▶▶: Fast winding buttons
   ❚❚ PAUSE: Pause button and indicator
   ● REC: Recording button and indicator
   (For the Canadian model only)
   ◁: Reverse play button and indicator
8 ⏏ Eject button (Deck A)

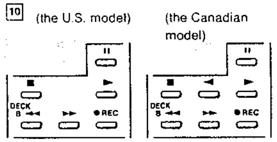
D



E


FUNCTION
SLEEP
POWER
TAPE
DECK A
DECK B
REC
PRESET
D.SKIP
M.SCAN
DBFB
TIME
TUNER
BAND
PRESET
VOL
1
2
3
4
5
6
7
8
9
10
11
12
13
14

2

(the U.S. model)
(the Canadian model)
TAPE
DECK A
TAPE
DECK A

10

(the U.S. model)
(the Canadian model)
DECK B
REC
DECK B
REC

Parts Identification

Display Window D

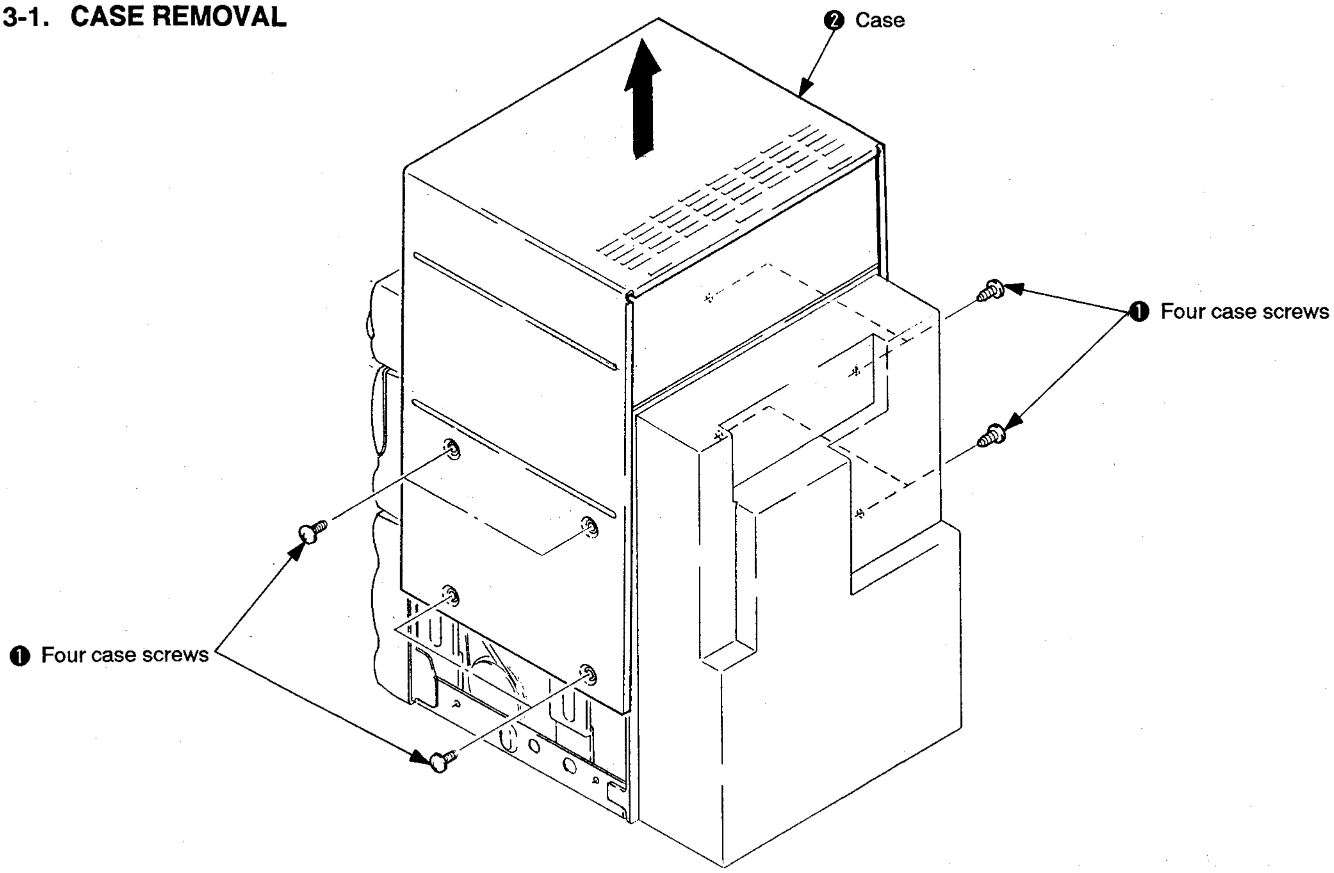
1 Timer indications
2 CD playing/editing mode indications
3 DBFB/SURROUND on/off indications
4 Sound Field Coordinator display
   ROCK
   JAZZ
   HALL
   FLAT
5 Spectrum analyzer display
6 CD selection numbers display
   Preset station number display
7 MEMORY indication
8 Tuner indication
9 Preset menu/Tuner/Timer/CD player display

Remote Commander E

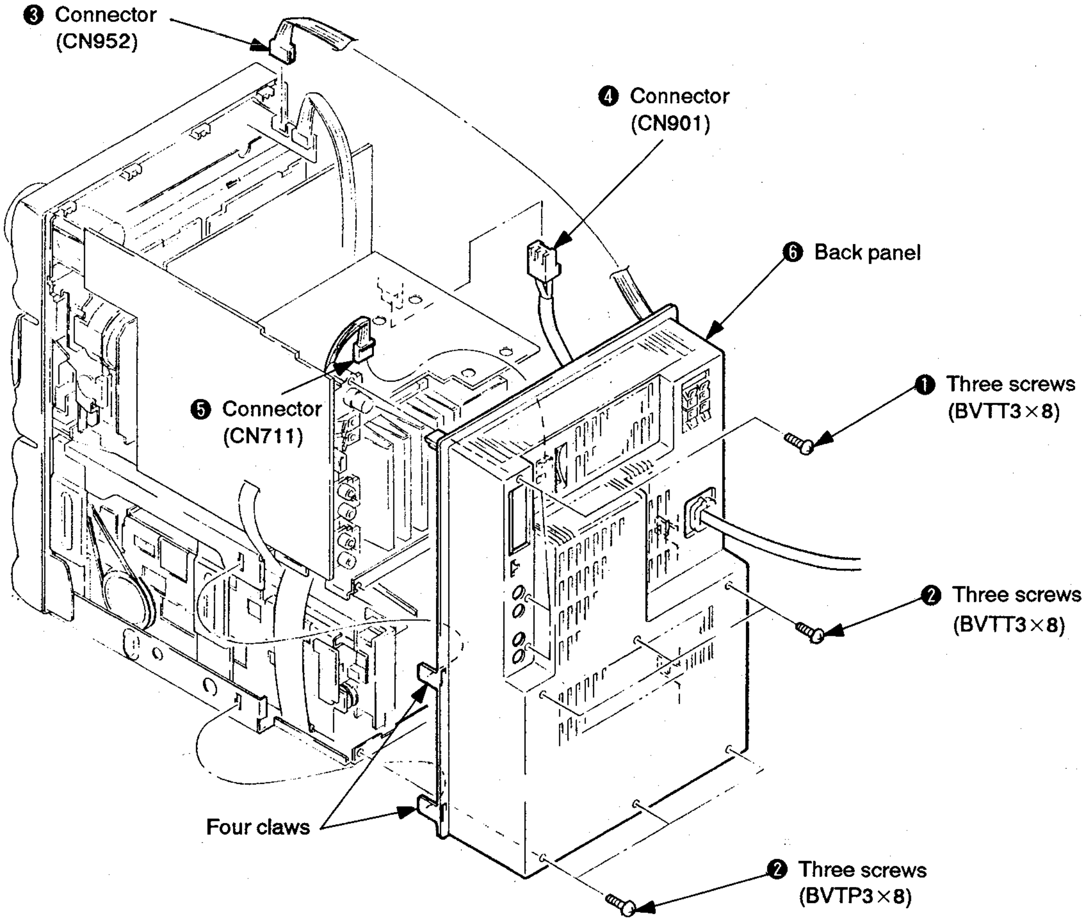
1 FUNCTION button
2 Cassette deck operation buttons (for Deck A)
3 CD operation buttons
4 D. SKIP button
5 M. SCAN button
6 TIME button
7 BAND button
8 SLEEP button
9 POWER button
10 Cassette deck operation buttons (for Deck B)
11 PRESET button
12 DBFB button
13 VOL +/– buttons
14 PRESET +/– buttons

SECTION 3
DISASSEMBLY

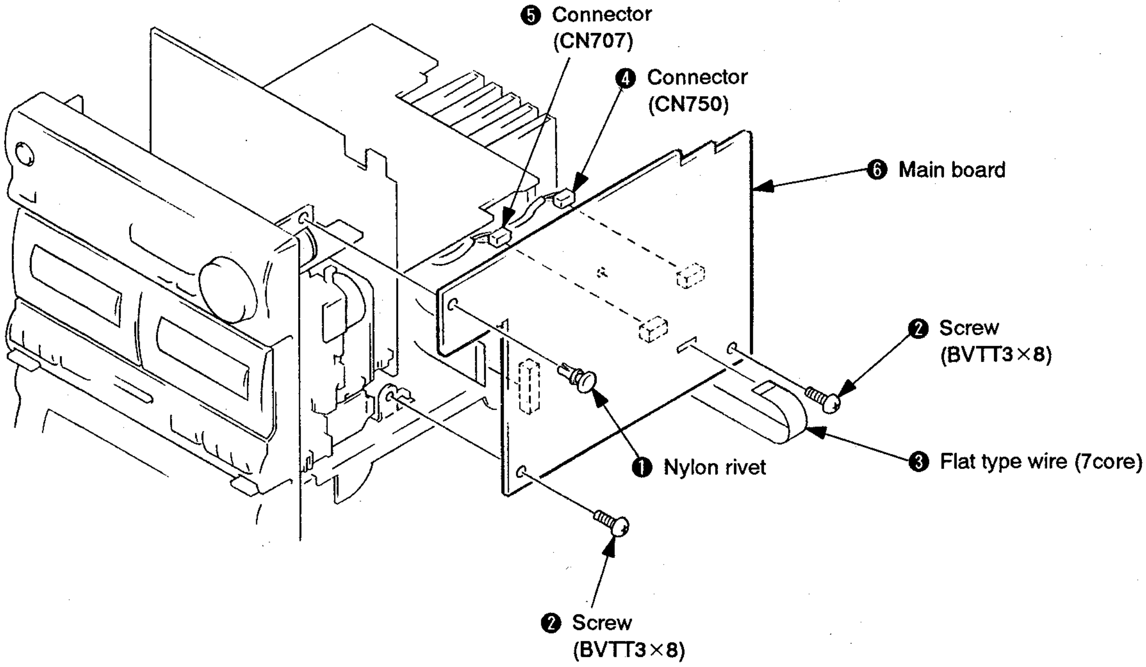
3-1. CASE REMOVAL


❷ Case
❶ Four case screws
❶ Four case screws

3-2. BACK PANEL REMOVAL

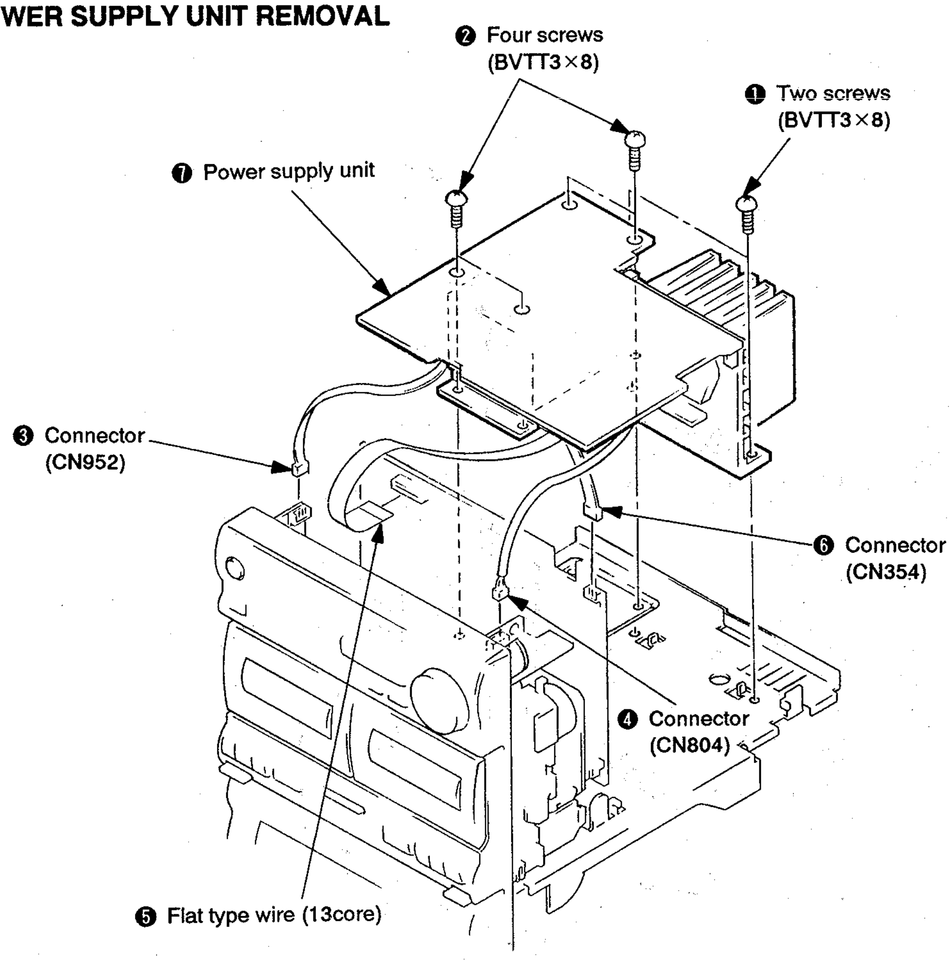

❸ Connector (CN952)
❹ Connector (CN901)
❻ Back panel
❺ Connector (CN711)
❶ Three screws (BVTT3×8)
❷ Three screws (BVTT3×8)
Four claws
❷ Three screws (BVTP3×8)

3-3. MAIN BOARD REMOVAL



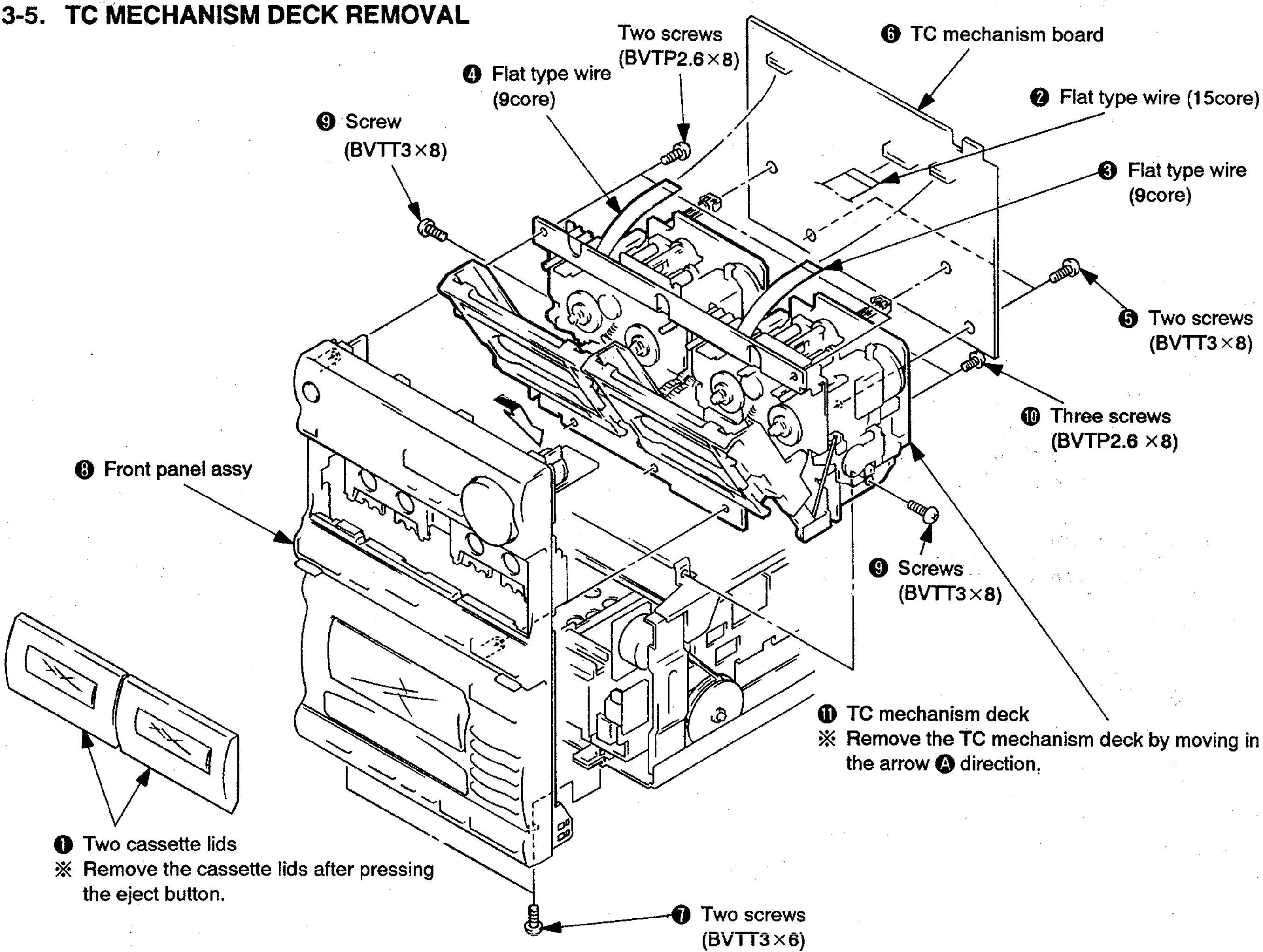
❺ Connector (CN707)
❹ Connector (CN750)
❻ Main board
❷ Screw (BVTT3×8)
❸ Flat type wire (7core)
❶ Nylon rivet
❷ Screw (BVTT3×8)

3-4. POWER SUPPLY UNIT REMOVAL

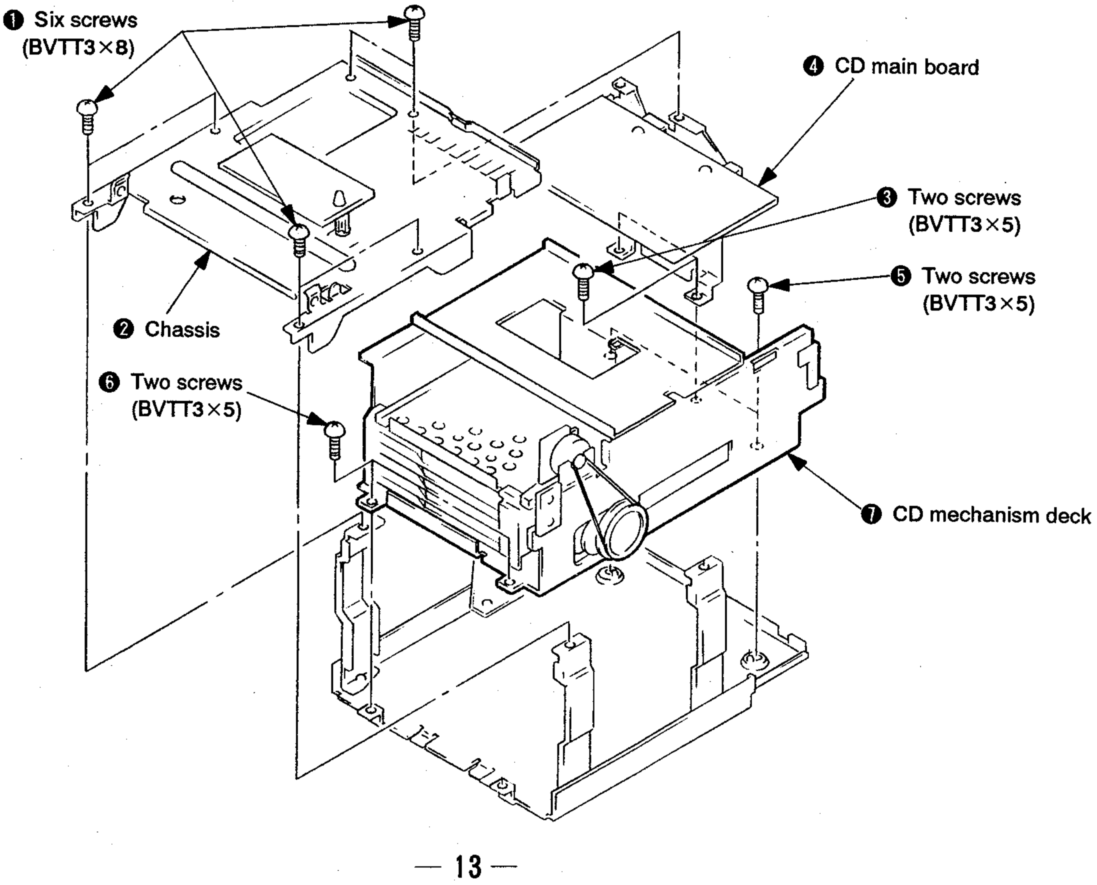


❷ Four screws (BVTT3×8)
❶ Two screws (BVTT3×8)
❼ Power supply unit
❸ Connector (CN952)
❻ Connector (CN354)
❹ Connector (CN804)
❺ Flat type wire (13core)

3-5. TC MECHANISM DECK REMOVAL


Two screws (BVTP2.6×8)
❹ Flat type wire (9core)
❾ Screw (BVTT3×8)
❻ TC mechanism board
❷ Flat type wire (15core)
❸ Flat type wire (9core)
❺ Two screws (BVTT3×8)
❿ Three screws (BVTP2.6 ×8)
❽ Front panel assy
❾ Screws (BVTT3×8)
⓫ TC mechanism deck
※ Remove the TC mechanism deck by moving in the arrow Ⓐ direction.
❶ Two cassette lids
※ Remove the cassette lids after pressing the eject button.
❼ Two screws (BVTT3×6)

3-6. CD MECHANISM DECK REMOVAL


❶ Six screws (BVTT3×8)
❹ CD main board
❸ Two screws (BVTT3×5)
❺ Two screws (BVTT3×5)
❷ Chassis
❻ Two screws (BVTT3×5)
❼ CD mechanism deck

SECTION 4
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured alcohol-moistened swab:
    - record/playback head — pinch roller
    - erase head — rubber belt
    - capstan — idler
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustment.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustment should be performed with the rated power supply voltage unless otherwise noted.

• Torque Measurement

Torque	Torque meter	Meter reading
Forward	CQ-102C	30 to 70g • cm (0.42 to 0.97oz • inch)
Forward back tension	CQ-102C	1.5 to 5.5 g • cm (0.020 to 0.076oz • inch)
Reverse	CQ-102RC	30 to 70g • cm (0.42 to 0.97oz • inch)
Reverse back tension	CQ-102RB	1.5 to 5.5 g • cm (0.020 to 0.076oz • inch)
FF/REW	CQ-201B	60 g • cm or more (0.82oz • inch or more)

SECTION 5
ELECTRICAL ADJUSTMENTS

DECK SECTION

1. The adjustment should be performed in the publication. (Be sure to make playback adjustment at first.)
2. The adjustment and measurement should be performed for both L-CH and R-CH.
    - Switch position
      DOLBY NR switch: OFF
      Function switch: TAPE
3. Perior to electrical adjustments, short the TP1 (IC202(63) PIN) to TP2 (GND) (test mode).

• Test Tape

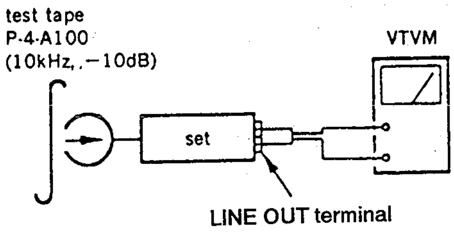
Tape	Contents	Use
P-4-A100	10kH, −10dB	Head Azimuth Adjustment
P-4-L300	315Hz, 0dB	Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

Record/Playback Head Azimuth Adjustment

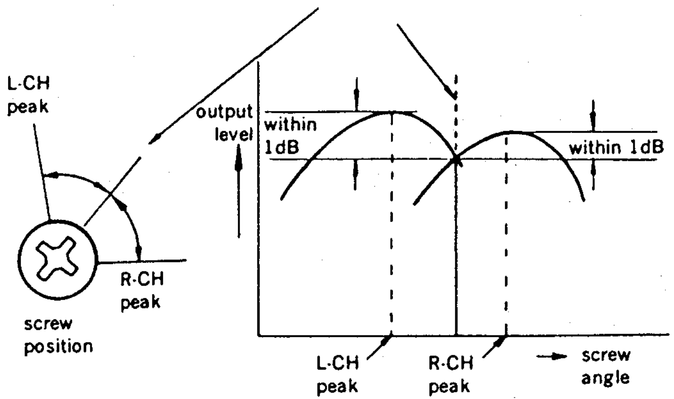
DECK A **DECK B**

Procedure:

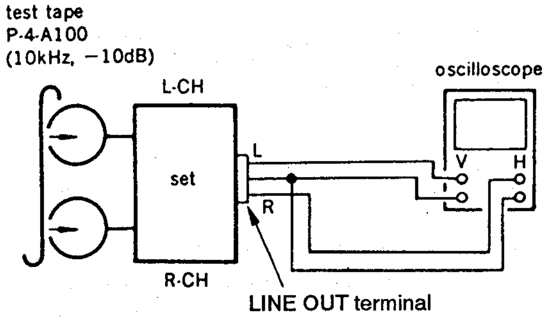
1. Forward Playback Mode
   Reverse Playback Mode (except C50U model)

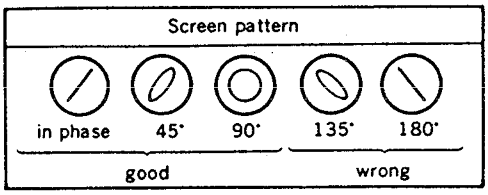


2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1 dB.


L-CH
peak
output
level
within
1dB
within 1dB
R-CH
peak
screw
position
L-CH
peak
R-CH
peak
screw
angle

3. Phase Check

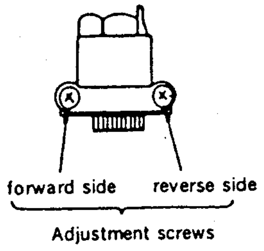

test tape
P-4-A100
(10kHz, −10dB)
L-CH
oscilloscope
set
L
R
V
H
R-CH
LINE OUT terminal

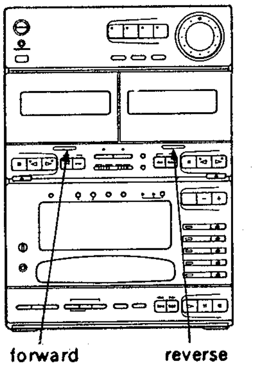

Screen pattern
in phase
45°
90°
135°
180°
good
wrong

4. Change the review playback mode and repeat the steps 1 to 3.
5. After the adjustment, lock the adjustment screw with suitable locking compound.

Adjustment Location: Record/Playback head (DECK A, B)

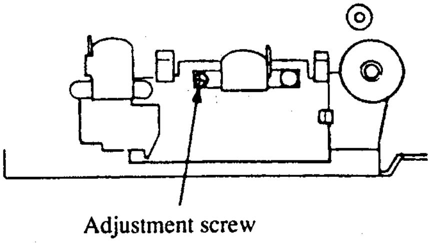
C50 model :


forward side
reverse side
Adjustment screws


forward
reverse

(C50 model)

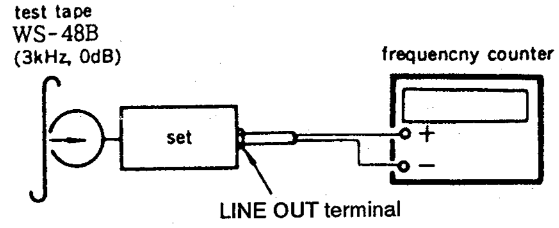
C50U model :


Adjustment screw

Tape Speed Adjustment **DECK A** **DECK B** (C50 model)

Procedure:

- Perform high speed adjustment before normal speed adjustment.
  Mode: playback


test tape
WS-48B
(3kHz, 0dB)
frequencny counter
set
+
−
LINE OUT terminal

Speed	Deck	Adjustment point	Frequency counter
※High	A	RV72A	5,970 to 6,030 Hz
	B	RV72B	
Normal	A	RV71A	2,985 to 3,015 Hz
	B	RV72B	

※ Continue to press HIGH SPEED DUBBING switch (S316) in playback mode : High speed playback.

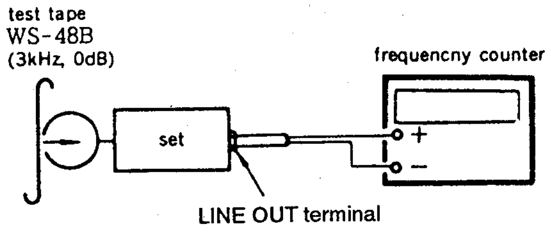
Frequency difference between the begining and the end of the tape should be within ±3%.
Frequency difference between deck A and deck B the begining of the tape should be within 1.5%.

Adjustment Location: MD-A and MD-B boards.

Tape Speed Adjustment (C50U model)

Procedure:

- Perform high speed adjustment before normal speed adjustment.
  Mode: playback


test tape
WS-48B
(3kHz, 0dB)
frequencny counter
set
+
−
LINE OUT terminal

Speed	Adjustment point	Frequency counter
※High	RV351	5,970 to 6,030 Hz
Normal	RV352	2,985 to 3,015 Hz

※ Continue to press HIGH SPEED DUBBING switch (S907) in playback mode : High speed playback.

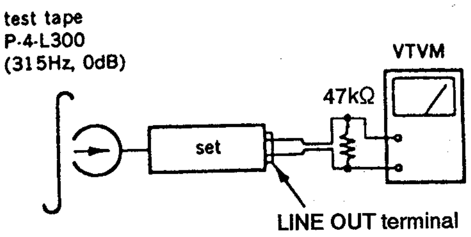
Frequency difference between the begining and the end of the tape should be within ±3%.
Frequency difference between deck A and deck B the begining of the tape should be within 1.5%.

Adjustment Location: TC MAIN (U) board.

Playback Level Adjustment DECK A DECK B

Procedure:

Mode: playback


test tape
P-4-L300
(315Hz, 0dB)
VTVM
47kΩ
set
LINE OUT terminal

Deck A is RV11A (C50), RV201 (C50U) (L-CH) and RV21A (C50), RV251 (C50U) (R-CH), deck B is RV11B (C50), RV211 (C50U) (L-CH) and RV21B (C50), RV261 (C50U) (R-CH) so that adjustment within adjustment level as follows.

Adjustment Level:
LINE OUT level: –10dB ±0.5dB (0.23 to 0.26V)
Level Difference between Channels: within 0.5dB

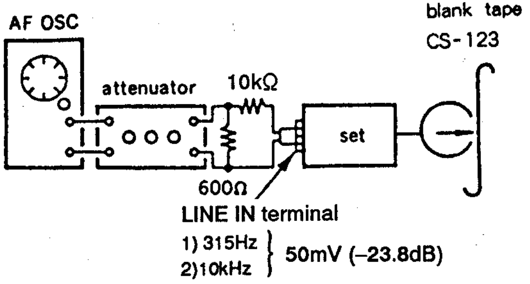
Confirm the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location: MD-A and MD-B boards (C50 model)
TC MAIN (U) board (C50U model)

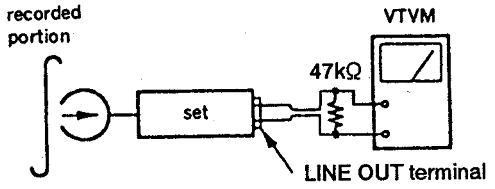
Record Bias Adjustment DECK B

Procedure:

1. record mode
   function switch : MD/PHONO or MD/VIDEO


AF OSC
blank tape
CS-123
attenuator
10kΩ
set
600Ω
LINE IN terminal
1) 315Hz
2) 10kHz
50mV (–23.8dB)

2. playback mode
   function switch : TAPE


recorded
portion
VTVM
47kΩ
set
LINE OUT terminal

Confirm playback the signal recorded in step 1 become adjustment level as follows.
If these levels do not adjustment level, adjustment the RV12 (C50), RV221 (C50U) (L-CH) and RV22 (C50), RV271 (C50U) (R-CH) to repeat step 1 and 2.

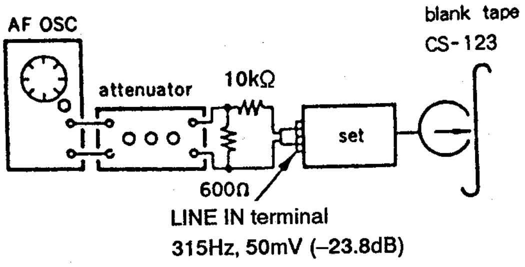
Adjustment Level: Playback output of 10kHz to playback output of 315Hz: –0.5dB to 0.5dB.

Adjustment Location: MD-B board (C50 model)
: TC MAIN (U) board (C50U model)

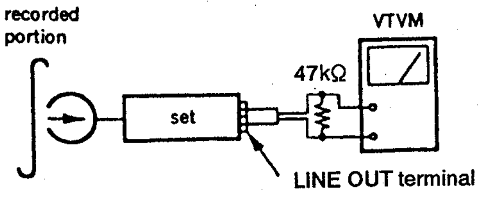
Record Level Adjustment DECK B

Procedure:

1. record mode
   function switch : MD/PHONO or MD/VIDEO


AF OSC
blank tape
CS-123
attenuator
10kΩ
set
600Ω
LINE IN terminal
315Hz, 50mV (–23.8dB)

2. playback mode
   function switch : TAPE


recorded
portion
VTVM
47kΩ
set
LINE OUT terminal

Confirm playback the signal recorded in step 1 become adjustment level as follows.
If these levels do not adjustment level, adjustment the RV301 (C50), RV231 (C50U) (L-CH) and RV201 (C50), RV281 (C50U) (R-CH) to repeat step 1 and 2.

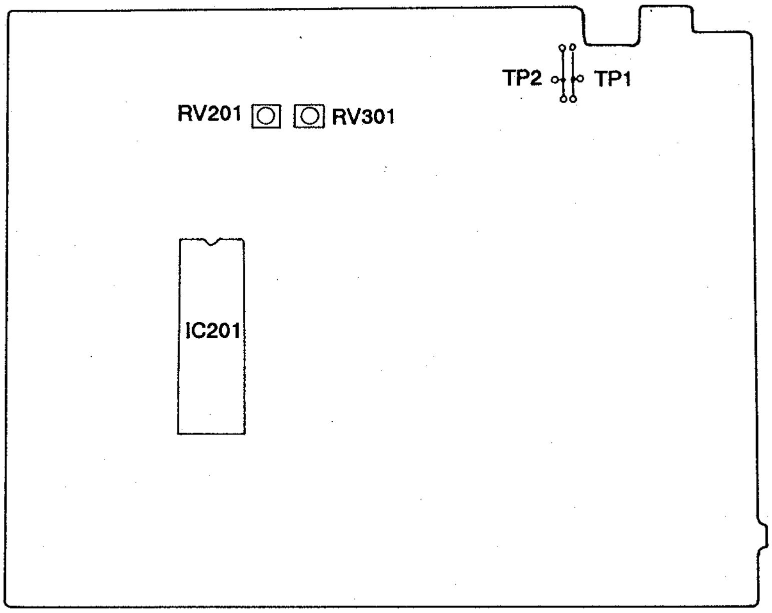
Adjustment Level:
LINE OUT level: –23.8dB±0.5dB (47 to 53mV).

Adjustment Location: TC MAIN board (C50 model)
TC MAIN (U) board (C50U model)

Adjustment Location:

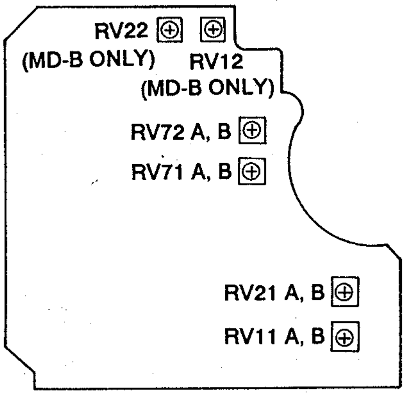
C50 model

[TC MAIN BOARD] — COMPONENT SIDE —


TP2
TP1
RV201
RV301
IC201

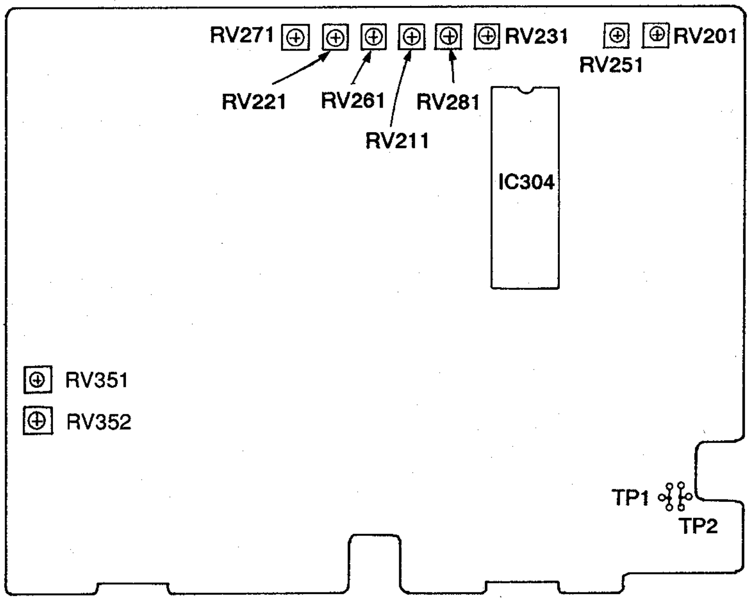
[MD-A & MD-B BOARD]

— COMPONENT SIDE —


RV22
(MD-B ONLY)
RV12
(MD-B ONLY)
RV72 A, B
RV71 A, B
RV21 A, B
RV11 A, B

C50U model

[TC MAIN (U) BOARD] — COMPONENT SIDE —

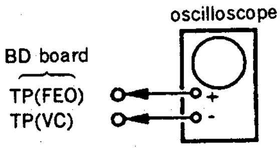

RV271
RV231
RV201
RV251
RV221
RV261
RV281
RV211
IC304
RV351
RV352
TP1
TP2

CD SECTION

Note :

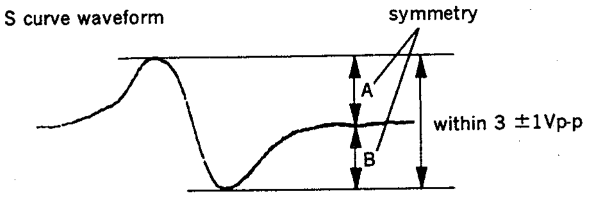
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S Curve Check



Procedure :

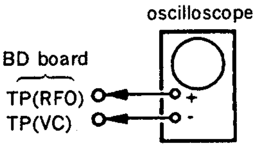
1. Connect oscilloscope to test point TP (FEO) on BD board.
2. Connect between test point TP (FES) and TP (VC) by lead wire.
3. Turned Power switch on and actuate the focus serch. (actuate the focus serch when disc table is moving in and out.)
4. Check the oscilloscope waveform (S curve) is symmetrical between A and B. And confirm peak to peak level within 3±1Vp-p.



5. After check, remove the lead wire connected in step 2.

Note : • Try to mesure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check

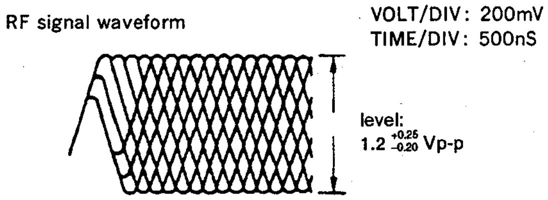


Procedure :

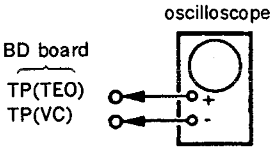
1. Connect oscilloscope to test point TP (RFO) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note :

Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

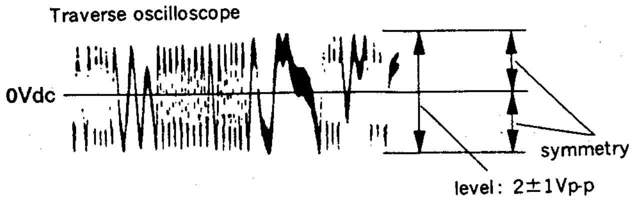


E-F Balance Check



Procedure :

1. Connect test point TP (ADJ) on CD MAIN board to ground and TP (TES) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TEO) on BD board.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the osilloscope waveform is symmetrical on the top and bottom in relation to 0Vdc, and check this level.

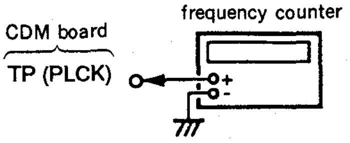


6. Remove the lead wire connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

1. Connect frequency counter to test point (PLCK : IC202 ㊶ PIN with lead wire.


frequency counter
CDM board
TP (PLCK)
+
-

2. Turn Power switch on.
3. Confirm that reading on frequency counter is 4.3218MHz.

Focus/Tracking Gain

This gain has a margin, so even if it is slightly off.

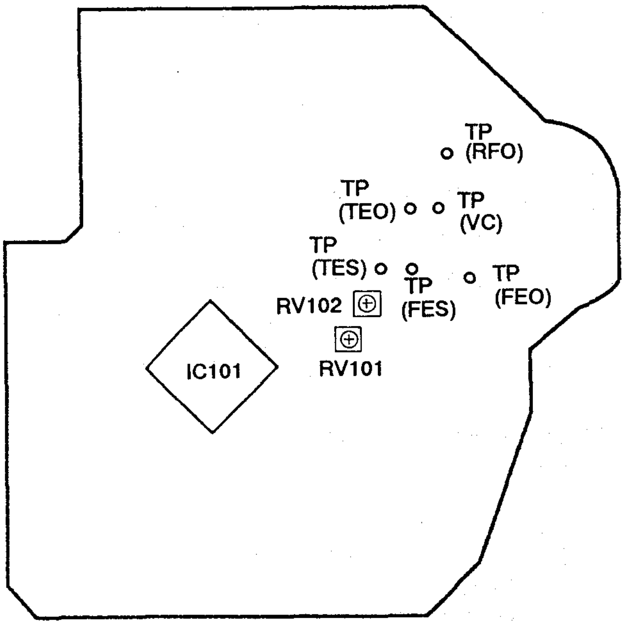
There is no problem.

Therefore, do not perform, this adjustment.

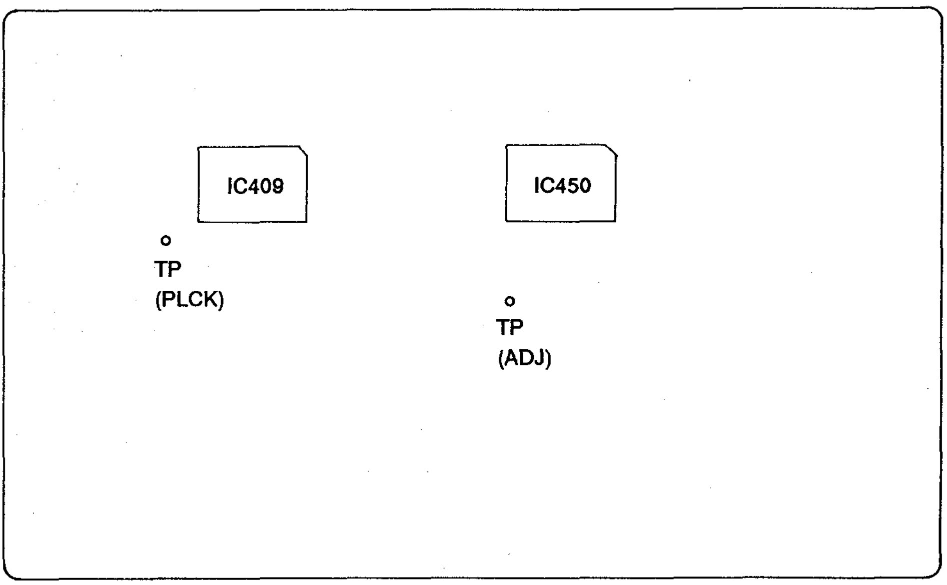
Please note that it should be fixed to mechanical center position when you moved and do not know original position.

Adjustment Location:

[BD BOARD] — CONDUCTOR SIDE —


TP (RFO)
TP (TEO)
TP (VC)
TP (TES)
TP (FES)
TP (FEO)
RV102
RV101
IC101

[CD MAIN BOARD] — CONDUCTOR SIDE —

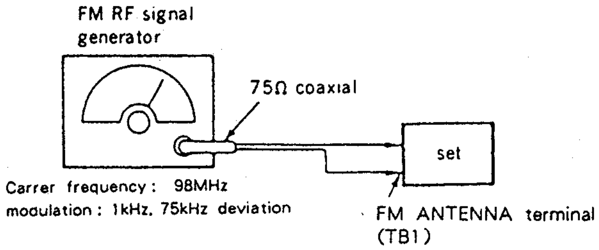

IC409
IC450
TP (PLCK)
TP (ADJ)

TUNER SECTION

Note : As a front-end (FE1) is difficult to repair if faulty, replace it with new one.

FM SECTION ADJUSTMENTS

Setting:


FM RF signal generator
75Ω coaxial
set
Carrer frequency : 98MHz
modulation : 1kHz, 75kHz deviation
FM ANTENNA terminal (TB1)

FM Tuned Indication Lighting Level Adjustment

Band: FM

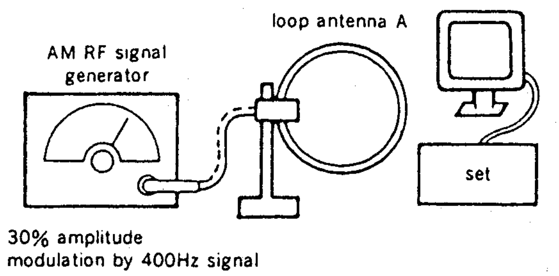
Procedure:

1. Supply a 12.6μV (22dBμ) 98MHz signal from the ANTENNA terminal.
2. Tune the set to 98MHz.
3. Adjust RV51 so that the TUNED light up.
4. Confirm that TUNED light off with FM RF signal generator output level set at 19dBμ.

AM SECTION ADJUSTMENTS

(C50: E, EA, AUS, SP, PX, model)

Setting:


loop antenna B
loop antenna A
AM RF signal generator
set
30% amplitude modulation by 400Hz signal

SW OSC Voltage Adjustment

Band: SW

Procedure:

1. Connect the Digital voltmeter to C32.
2. Tune the set to 5.95MHz.
3. Adjust T2 for 0.9 to 1.1Vdc reading on the Digital voltmeter.
4. Tune the set to 17.90MHz.
5. Adjust CV2 for 8.3 to 8.7Vdc reading on the Digital voltmeter.

SW Tracking Adjustment

Band: SW

Procedure:

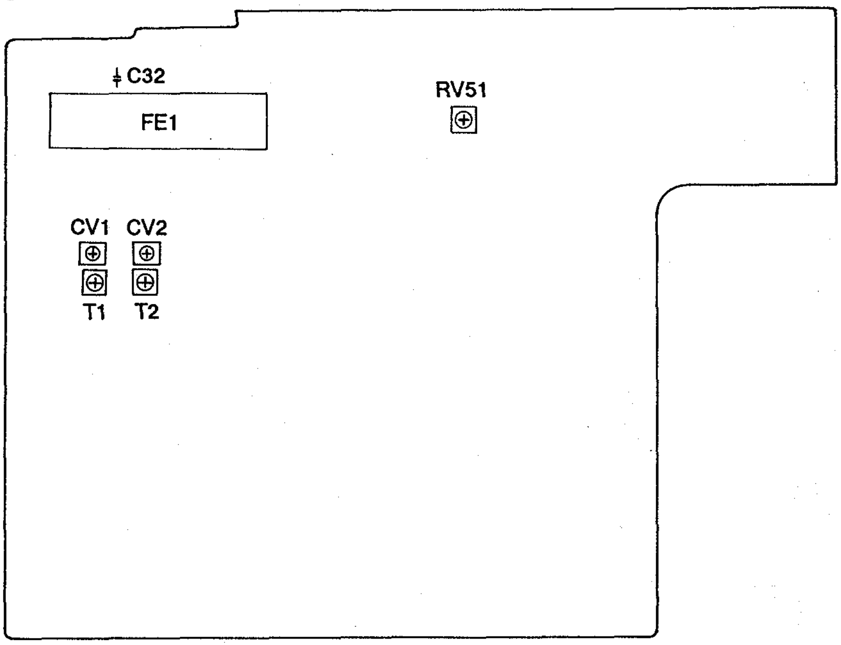
1. Connect the VTVM to speaker terminal.
2. Adjust for a maximum reading on VTVM (TB951).

Signal generator and Set frequency	Adjustment part
7.0MHz	T1
17.0MHz	CV1

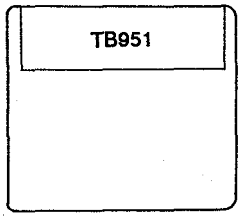
Note : EA: Saudi Arabia
AUS: Australian
SP: Singapore

Adjustment Location:

[MAIN BOARD] — COMPONENT SIDE —


C32
FE1
RV51
CV1
CV2
T1
T2

[SP TM BOARD] — COMPONENT SIDE —



SECTION 6
IC PIN FUNCTIONS

• IC202 DECK CONTROLLER (M50964-260FP)

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Symbol</th><th>Description</th></tr>
<tr><td>1</td><td>P62</td><td></td><td>G</td><td>GND</td></tr>
<tr><td>2</td><td>P61</td><td></td><td>G</td><td>GND</td></tr>
<tr><td>3</td><td>P60</td><td></td><td>G</td><td>GND</td></tr>
<tr><td>4</td><td>P47</td><td></td><td>G</td><td>GND</td></tr>
<tr><td>5</td><td>P46</td><td></td><td>G</td><td>GND</td></tr>
<tr><td>6</td><td>AN5</td><td>I</td><td>B HALF</td><td>Deck B record prevention claw A, B detection input (Analog)
<table>
<tr><th>Volgate (V)</th><th>1V</th><th>1.9V</th><th>2.8V</th><th>3.9V</th><th>5V</th></tr>
<tr><td>Half</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>OFF</td></tr>
<tr><td>E. PROOF A</td><td>OFF</td><td>ON</td><td>OFF</td><td>ON</td><td>OFF</td></tr>
<tr><td>E. PROOF B</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td></tr>
</table></td></tr>
<tr><td>7</td><td>AN4</td><td>I</td><td>KEY Y</td><td rowspan="2">KEY input
<table>
<tr><th>Voltage (V)</th><th>0</th><th>0.3</th><th>0.7</th><th>1.2</th><th>1.7</th><th>2.3</th><th>2.8</th><th>3.4</th><th>4.0</th><th>4.5</th><th>5.0</th></tr>
<tr><td>KEY Y</td><td>B■</td><td>B❚❚</td><td>B▶</td><td>B◀</td><td></td><td>A◀◀</td><td>A▶▶</td><td></td><td></td><td>RELAY</td><td>OFF</td></tr>
<tr><td>KEY X</td><td>A■</td><td>A▶</td><td>A◀</td><td>B◀◀</td><td>B▶▶</td><td>B●</td><td>HIGH SPEED DUBBING</td><td></td><td>CD</td><td></td><td></td></tr>
</table></td></tr>
<tr><td>8</td><td>AN3</td><td>I</td><td>KEY X</td></tr>
<tr><td>9</td><td>AN2</td><td>I</td><td>AMS IN</td><td>AMS signal input</td></tr>
<tr><td>10</td><td>P41</td><td>O</td><td>L MUTE</td><td>Line mute output</td></tr>
<tr><td>11</td><td>P40</td><td>O</td><td>$\overline{\text{R MUTE}}$</td><td>mute output</td></tr>
<tr><td>12</td><td>P37</td><td>O</td><td>$\overline{\text{RELAY}}$ (B MD)</td><td>REC/PB change relay output</td></tr>
<tr><td>13</td><td>P36</td><td>O</td><td>$\overline{\text{R}}$/P</td><td>Dolby IC REC/PB select output</td></tr>
<tr><td>14</td><td>P35</td><td>O</td><td>EQ70</td><td>Playback EQ output for playing deck (Not Used)</td></tr>
<tr><td>15</td><td>P34</td><td>O</td><td>SEL A/$\overline{\text{B}}$</td><td>Dolby IC PB input Deck A/B select output</td></tr>
<tr><td>16</td><td>P33</td><td>O</td><td>AMS A/$\overline{\text{B}}$</td><td>AMS AMP input Deck A/B select output</td></tr>
<tr><td>17</td><td>P32</td><td>I</td><td>AU BUS</td><td>AUDIO BUS input</td></tr>
<tr><td>18</td><td>P31</td><td>O</td><td>$\overline{\text{BIAS}}$</td><td>Bias oscillation output</td></tr>
<tr><td>19</td><td>P30</td><td>O</td><td>AUB OUT</td><td>AUDIO BUS output</td></tr>
<tr><td>20</td><td>INT1</td><td>I</td><td>A BUS</td><td>AUDIO BUS normal input</td></tr>
<tr><td>21</td><td>NC</td><td>—</td><td>———</td><td>———</td></tr>
<tr><td>22</td><td>NC</td><td>—</td><td>———</td><td>———</td></tr>
<tr><td>23</td><td>NC</td><td>—</td><td>———</td><td>———</td></tr>
<tr><td>24</td><td>VSS</td><td></td><td>VSS</td><td>GND</td></tr>
<tr><td>25</td><td>$\overline{\text{RESET}}$</td><td>I</td><td>$\overline{\text{RESET}}$</td><td>Microcomputer reset input</td></tr>
<tr><td>26</td><td>XIN</td><td>I</td><td>XIN</td><td>Clock input (4MHz)</td></tr>
<tr><td>27</td><td>Xo</td><td>O</td><td>XOUT</td><td>Clock output (4MHz)</td></tr>
<tr><td>28</td><td>Φ</td><td>O</td><td>Φ</td><td>Not used (open)</td></tr>
<tr><td>29, 65</td><td>Vss</td><td></td><td>Vss</td><td>GND</td></tr>
<tr><td>30</td><td>P57</td><td>I</td><td>PW IN</td><td>POWER OFF detection input</td></tr>
<tr><td>31</td><td>P56</td><td>I</td><td>A STOP</td><td>Deck A STOP switch input</td></tr>
<tr><td>32</td><td>P55</td><td>I</td><td>$\overline{\text{A HALF}}$</td><td>Deck A Half switch input</td></tr>
<tr><td>33</td><td>P54</td><td>I</td><td>A SHUT</td><td>Deck A Reel table signal input</td></tr>
<tr><td>34</td><td>P53</td><td>I</td><td>A70 U</td><td>Deck A TYPE II switch input</td></tr>
<tr><td>35</td><td>P52</td><td>I</td><td>B STOP</td><td>Deck B STOP switch input</td></tr>
<tr><td>36</td><td>P51</td><td>I</td><td>B SHUT</td><td>Deck B Reel table signal input</td></tr>
<tr><td>37</td><td>P50</td><td>I</td><td>B70 U</td><td>Deck B TYPE II switch input</td></tr>
<tr><td>38</td><td>NC</td><td>—</td><td>———</td><td>———</td></tr>
<tr><td>39</td><td>P17</td><td>O</td><td>ARM 3</td><td>Deck A Reel Motor control out</td></tr>
<tr><td>40</td><td>P16</td><td>O</td><td>ARM 2</td><td>Deck A Reel Motor control out</td></tr>
</table>

Pin No.	Pin Name	I/O	Symbol	Description
41	P15	O	ARM 1	Deck A Reel Motor control out
42	P14	O	BRM 3	Deck B Reel Motor control out
43	P13	O	BRM 2	Deck B Reel Motor control out
44	P12	O	BRM 1	Deck B Reel Motor control out
45	P11	O	H/L	Capstan motor speed select
46	P10	O	A CM	A Capstan motor ON/OFF
47	P07	O	B CM	B Capstan motor ON/OFF
48	P06	I	BS/ASCH	Deck A Reel table/BS signal input
49	P05	I	A • P/BSCH	Deck B Reel table/A • P signal input
50	P04	O	A ◁	Deck A RVS LED output
51	P03	O	A ▷	Deck A FWD LED output
52	P02	O	A PLAY	Deck B RVS/FWD LED control output (Not Used)
53	P01	O	DUB H	High Speed Dubbing LED output
54	P00	O	DUB N	Normal Speed Dubbing LED output (Not Used)
55	NC	—	——	——
56	P27	O	CD SYNC	Auto CD Synchro LED output
57	P26	O	B ◁	Deck B RVS LED output
58	P25	O	B ▷	Deck B FWD LED output
59	024	O	B PLAY	Deck B RVS/FWD LED control output (Not Used)
60	P23	O	B PAUSE	Deck B PAUSE LED output
61	P22	O	B ●	Auto CD Synchro LED output
62	P21	O	PASS	PASS amplifier switch output
63	P20	I	TEST	Electrical adjustment test mode setting
64	NC	—	——	——
66	NC	—	——	——
67	Vcc		Vcc	POWER 5 ± 0.5V
68	AVss		AVss	Analog system GND
69	VREF	I	VREF	Analog system reference voltage input
70	D • A		DAC	GND
71	PWM		——	GND
72	P63		——	GND

[TEST MODE]

When making pin (63) low (connect TP1 to ground with jumper wire), following function operates.

1. Sourec monitor
   Release the line mute while recording.

- **IC361 MECHANISM CONTROLLER (M3747M4-220SP)**

The Mechanism deck is controlled.

Pin No.	Pin Name	I/O	Description
1	$\overline{\text{TEST}}$	I	TEST mode selector terminal "H": NORMAL MODE, "L": TEST MODE
2	$\overline{\text{BIAS}}$	O	Bias osc terminal "L": ON
3	SPEED H/L	O	NORMAL/HIGH selector for recording equalizer, "H": HIGH, "L": NORMAL
4	$\overline{\text{B REC}}$	O	LED drive terminal for B deck record mode "L": LIGHT
5	$\overline{\text{DUB H}}$	O	LED drive terminal for HIGH SPEED DUBBING "L": LIGHT
6	$\overline{\text{DUB N}}$	O	LED drive terminal for NORMAL SPEED DUBBING "L": LIGHT (Not in used)
7	$\overline{\text{A PLAY}}$	O	LED drive terminal for A deck play mode "L": LIGHT
8	$\overline{\text{B PLAY}}$	O	LED drive terminal for B deck play mode "L": LIGHT
9	$\overline{\text{B PAUSE}}$	O	LED drive terminal for B deck pause mode "L": LIGHT
10 11	KEY Y KEY X	I	

KEY Y INPUT	STOP-B	PAUSE-B	PLAY-B	–	REW-A	FF-A
KEY X INPUT	STOP-A	PLAY-A	REW-B	FF-B	REC-B	DUB H
IC361 Pin ⑩, ⑪	0V	0.65V	1.35V	2.15V	2.84V	3.57V

Pin No.	Pin Name	I/O	Description
12	N.C.	–	Not in used (Open)
13	PW SW	I	POWER switch input terminal "H": POWER ON (The equipment is fixed at "H")
14	B SHUT	I	S-side reel rotation detection at DECK-B
15	A SHUT	I	S-side reel rotation detection at DECK-A
16	PW IN (AC)	I	Power in terminal "H": POWER ON
17	$\overline{\text{PW HOLD}}$	O	Power holding output terminal "L": POWER ON HOLDING (Not in used)
18	VREF	I	Reference voltage +5V
19	XI	I	Oscillation input terminal } (4MHz)
20	XO	O	Oscillation output terminal } (4MHz)
21	VSS	–	Ground terminal
22	VCC	–	+5V power supply terminal
23	$\overline{\text{B STOP SW}}$	I	Mechanism play mode switch input for DECK-B "H": PLAY
24	$\overline{\text{A STOP SW}}$	I	Mechanism play mode switch input for DECK-A "H": PLAY
25	RESET	I	RESET signal input terminal "L": RESET
26	AU BUS IN	I	SIRCS signal input terminal
27	$\overline{\text{REC DT}}$	I	REC claw detection at DECK-B "L": REC CLAW PROOF
28	$\overline{\text{B HALF}}$	I	Half pawl input for DECK-B "L": AVAILABLE
29	$\overline{\text{A HALF}}$	I	Half pawl input for DECK-A "L": AVAILABLE
30	CAP H/L	O	Tape speed selector "L": HIGH SPEED, "H": NORMAL SPEED
31	CAPM	O	Capstan motor ON/OFF switch "L": ON
32	TRG H/L	O	Clamp voltage output terminal
33	B TRG	O	Trigger signal output for DECK-B
34	A TRG	O	Trigger signal output for DECK-A
35	AU BUS OUT	O	SIRCS signal output terminal
36	INH	O	Inhibit signal output terminal
37	PB A/B	O	DECK-A/DECK-B play selector, at DECK-B "H": DECK-A, "L": DECK-B
38	RELAY	O	Recording/play selector at DECK-B "H": RECORDING
39	R/P	O	Recording/play selector for dolby (IC304) "H": PLAY
40	$\overline{\text{R M}}$	O	Recording mute ON/OFF "L": MUTE ON
41	$\overline{\text{L M}}$	O	Line mute ON/OFF "L": MUTE ON
42	ER CHECK	O	Error check terminal "L": Checked, "H": Not Checked (Not in used)

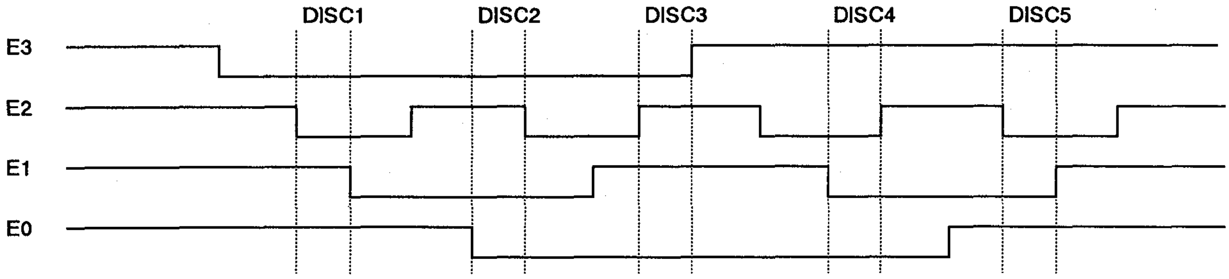
• IC450 CD MECHANISM CONTROLLER (μPD75516GF-461-3B9)

This IC carries out data communication with CXA1372AQ (RF signal processing and servo processing), CXD2500BQ (digital signal processing), MSM6538-01GS-VKR1 (digital filter) and μPD75517GF (CD master controller) of CD section to mainly control mechanism section.

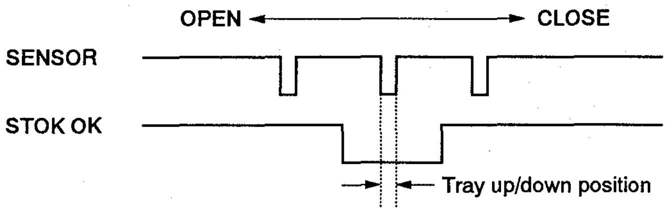
Pin No.	Pin Name	I/O	Function
1			OPEN
2	AVDD	–	+5V power supply
3	VDD	–	+5V power supply
4	VDD	–	+5V power supply
5	ENCODER E3	I	Stock position detecting decoder input 3 *1
6	ENCODER E2	I	Stock position detecting decoder input 2 *1
7	ENCODER E1	I	Stock position detecting decoder input 1 *1
8	ENCODER E0	I	Stock position detecting decoder input 0 *1
9	D7	I/O	Not used. (Connected to GND.)
10	D6	I/O	
11	D5	I/O	
12	D4	I/O	
13	D3	I/O	
14	D2	I/O	
15	D1	I/O	
16	D0	I/O	
17	GFS	I	GFS signal from digital signal processor (CXD2500BQ). “L”: NG, “H”: OK.
18	SENSE	I	SENS signal from digital signal processor (CXD2500BQ)
19	DOWN SW	I	Down input of up/down selector
20	UP SW	I	Up input of up/down selector
21	A11	O	Not used. (open)
22	A10	O	
23	A9	O	
24	A8	O	
25	49PIN SELECT	I	Pin-49 function switching. “L”: stock in, “H”: box up/down.
26	LD ON	O	Optical pickup block laser diode control. “H”: ON, “L”: OFF.
27	WE	O	Not used. (open)
28	A12	O	Not used. (open)
29	A7	O	
30	A6	O	
31	A5	O	
32	A4	O	
33	GND	–	GND
34	A3	O	Not used. (open)
35	A2	O	
36	A1	O	
37	A0	O	
38	QINT	O	Communication data reading request to CD master controller (μPD75517)
39	M/F	I	Signal that indicates kind of communication data from CD master controller (μPD75517). “H”: mechanism command, “L”: file command.
40	SACK	O	Communication answer code to CD master controller (μPD75517)

Pin No.	Pin Name	I/O	Function
41	MREQ	I	Communication data reading request from CD master controller (μPD75517). Master request.
42	CMD3	I/O	Communication data 3 to/from CD master controller (μPD75517)
43	CMD2	I/O	Communication data 2 to/from CD master controller (μPD75517)
44	CMD1	I/O	Communication data 1 to/from CD master controller (μPD75517)
45	CMD0	I/O	Communication data 0 to/from CD master controller (μPD75517)
46	CHIN	I	Tracking jump number counting from RF/servo IC (CXA1372AQ)
47	FOK	I	Focus OK signal from RF/servo IC (CXA1372AQ). "H": OK.
48	SCOR	I	Subcode SYNC S0+S1 detecting from digital signal processor (CXD2500BQ)
49	SENSER	I	Tray position (stock in) detecting *2
50	SUBQ	I	Subcode Q data from digital signal processor (CXD2500BQ)
51	GND	–	GND
52	SQCK	O	Subcode Q data reading clock to digital signal processor (CXD2500BQ)
53	ADJ	I	Test mode. Fixed at "H" ("L": test mode).
54	GND	–	GND
55	XT1	I	Not used. (Connected to GND.)
56	XT2	O	Not used. (open)
57	GND	–	GND
58	X1	I	Connected to system clock (4.19MHz) oscillator.
59	X2	O	
60	RESET	I	Reset from CD master controller (μPD75517). "L": reset.
61	D/F LATCH	O	Serial data latch to digital filter (CXD2554M-T6)
62	DSP LATCH	O	Serial data latch to digital signal processor (CXD2500BQ)
63	CLK	O	Serial clock to digital signal processor (CXD2500BQ) and digital filter (MSM6538-OIGS-VKR1)
64	DATA	O	Serial data to digital signal processor (CXD2500BQ) and digital filter (MSM6538-OIGS-VKR1)
65	DFCTSW	O	RF/Servo IC (CXA1372AQ) defect circuit ON/OFF control. "L": ON, "H": OFF. Disc defect detecting stops during focus search. (Set to "H".)
66	MUTE	O	CD audio mute. "H": mute.
67	CLAMP M3M	O	CLAMP motor control *3
68	CLAMP M3P	O	
69	UP/DOWN M2M	O	UP/DOWN motor control *4
70	UP/DOWN M2P	O	
71	LOADING M1M	O	Loading motor control *5
72	LOADING M1P	O	
73	A GND	–	GND
74	STOK OK	I	Tray position detecting. "L": stock up/down movable area *2
75	DISC SENS	I	Disc sensing. "H": with disc, "L": no disc.
76	DISC TABLE IN SW	I	Loading switch
77	DISC TABLE OUT SW	I	Unloading switch
78	TEST	I	Test mode. Fixed at "H" ("L": test mode).
79	AF ADJ	I	Test mode. Fixed at "H" ("L": test mode).
80			Not used. (open)

*1


DISC1
DISC2
DISC3
DISC4
DISC5
E3
E2
E1
E0

*2


OPEN
CLOSE
SENSOR
STOK OK
Tray up/down position

*3

	UP	DOWN	BRAKE
CLAMP M3P	H	L	H
CLAMP M3M	L	H	H

*4

	UP	DOWN	BRAKE
UP/DOWN M2P	H	L	H
UP/DOWN M2M	L	H	H

*5

	OUT	IN	BRAKE
LOADING M1P	H	L	H
LOADING M1M	L	H	H

• IC501 DISPLAY CONTROLLER (μPD78042-GF-033-3B9)

Pin No.	Pin Name	I/O	Function
1	8G	O	Fluorescent display driving
2	9G	O	
3	10G	O	
4	11G	O	
5	12G	O	
6	13G	O	
7	14G	O	
8	+5V	–	+5V power supply
9	CE	O	Chip select to tuner PLL IC (LC7218)
10	DATA.OUT	O	Serial data to tuner PLL IC (LC7218) and TONE controller (TC9184P)
11	CLOCK	O	Serial clock to tuner PLL IC (LC7218) and TONE controller (TC9184P)
12	DATA.IN	I	Serial data from tuner PLL IC (LC7218)
13	TUNED	I	Tuning discrimination from FM/AM IF amplifier (LA1831). "L": tuning.
14	STEREO	I	FM stereo discrimination from FM/AM IF amplifier (LA1831). "L": stereo.
15	LED CL	O	Reset to LED driver (M66342)
16	LED CE	O	Chip enable to LED driver (M66342)
17	RESET	I	Reset. "L": reset.
18	T.MUT	O	Tuner muting. "H": mute.
19	A.MUT	O	Audio muting. "L": mute.
20	GND	–	GND
21	VAR	I	Destination switching *1
22	12K	I	Spectrum analyzer (12KHz)
23	4K	I	Spectrum analyzer (4KHz)
24	1K	I	Spectrum analyzer (1KHz)
25	400	I	Spectrum analyzer (400Hz)
26	100	I	Spectrum analyzer (100Hz)
27	KEY.IN	I	Key input *2
28	KEY.IN	I	
29	AV	–	+5V power supply
30	AV.REF	–	+5V power supply
31	XT1	I	Subsystem clock (32.768KHz). Connected to crystal oscillator.
32	XT2	O	
33	GND	–	GND
34	X1	I	System clock (32.768KHz). Connected to crystal oscillator.
35	X2	O	
36	TONE/LED DATA	O	Serial data to LED driver (M66342P)
37	TONE/LED CLOCK	O	Serial clock to LED driver (M66342P)
38	TONE/LED CE	O	Chip enable to TONE controller (TC9184P)
39	AU.B-OUT	O	Audio bus
40	CD.DATA D3	I	Display data 3 from CD controller (μPD75517)
41	CD.DATA D2	I	Display data 2 from CD controller (μPD75517)
42	CD.DATA D1	I	Display data 1 from CD controller (μPD75517)
43	CD.DATA D0	I	Display data 0 from CD controller (μPD75517)
44	CD.DPCLK	I	Serial clock from CD controller (μPD75517)
45	AMP CLOCK	O	Serial clock to serial IN/parallel OUT (M50253P)

Pin No.	Pin Name	I/O	Function
46	AMP DATA	O	Serial data to serial IN/parallel OUT (M50253P)
47	STOP	I	Power failure detecting (M51953BPF)
48	GND	–	GND
49	AU.B-IN	I	Audio bus
50	SIRCS.IN	I	Infrared remote commander signal
51	POWER	O	Power ON/OFF control. “L”: power supply ON.
52	+5V	–	+5V power supply
53	P19	O	Fluorescent display driving
54	P20	O	
55	P18	O	
56	P17	O	
57	P9	O	
58	P10	O	
59	P11	O	
60	P12	O	
61	P13	O	
62	P14	O	
63	P15	O	
64	P16	O	
65	P1	O	
66	P2	O	
67	P3	O	
68	P4	O	
69	P5	O	
70	P6	O	
71	–27V	–	–27V power supply for driving fluorescent display
72	P7	O	Fluorescent display driving
73	P8	O	
74	1G	O	
75	2G	O	
76	3G	O	
77	4G	O	
78	5G	O	
79	6G	O	
80	7G	O	

*1

Voltage (Vdc)	0.6	1.3	2.0	2.6	3.1	3.7
Destination	AUS EA SP E	UK AEP	CAD U	IT	EE	G

AUS : Australian model
EA : Saudi Arabia model
SP : Singapore model
CND : Canadian model
IT : Italian model
EE : East European model
G : German model

*2

Voltage (Vdc)	0.0	0.3	0.6	0.9	1.2	1.5	1.9	2.2	2.5	5.0
Pin ㉗	POWER	TUNER	CD	TAPE	VIDEO	REC				No input
Pin ㉘	KARAOKE	DISPLAY	TIMER	MEMORY/ NEXT	STEREO/ MONO	MODE	BAND	–	+	No input

• IC601 CD MASTER CONTROLLER (µPD75517-GF-209-3B9)

Pin No.	Pin Name	I/O	Function
1	KEY0	I	Key input 0 *1
2	VDD	–	+5V power supply
3		–	Connected to +5V.
4		–	Connected to +5V.
5			Open
6			Open
7	ON/OFF	O	CD player power supply ON/OFF. "H": ON.
8	MD RESET	O	CD mechanism controller (μPD75516GF) resetting. "L": reset
9	CD.DPCLK	O	Clock for transferring display data to display controller (μPD78042GF)
10			Open
11	AUBUS OUT	O	Audio bus
12	MREQ	O	Communication data reading request to CD mechanism controller (μPD75516GF). Master request.
13	AUBUS/SIRCS	I	Audio bus/SIRCS switching. Connected to +5V.
14	TEST	I	Fixed at "H". ("L": Accident code appears when power ON.)
15	SUF.REP	I	Fixed at "H". ("L": All discs repeat shuffle.)
16	D.SKIP	I	Fixed at +2.5V.
17			Connected to +5V.
18			
19			
20			
21			
22			
23			
24	SACK	I	Communication answer code from CD mechanism controller (μPD75516GF)
25			Open
26			
27			
28			
29	P53		Open
30	P52		
31	P51		
32	DISC-5	O	Disc 5 LED driving. "H": lighting.
33	VSS		GND
34	DISC-4	O	Disc 4 LED driving. "H": Lighting.
35	DISC-3	O	Disc 3 LED driving. "H": Lighting.
36	DISC-2	O	Disc 2 LED driving. "H": Lighting.
37	DISC-1	O	Disc 1 LED driving. "H": Lighting.
38			Open
39			
40			
41	M/F	O	Signal that indicates the kind of communication data to CD mechanism controller (μPD75516GF). "H": mechanism command, "L": file command.
42	CD.DATA D3	O	Display data 3 to display controller (μPD78042GF)
43	CD.DATA D2	O	Display data 2 to display controller (μPD78042GF)
44	CD.DATA D1	O	Display data 1 to display controller (μPD78042GF)
45	CD.DATA D0	O	Display data 0 to display controller (μPD78042GF)

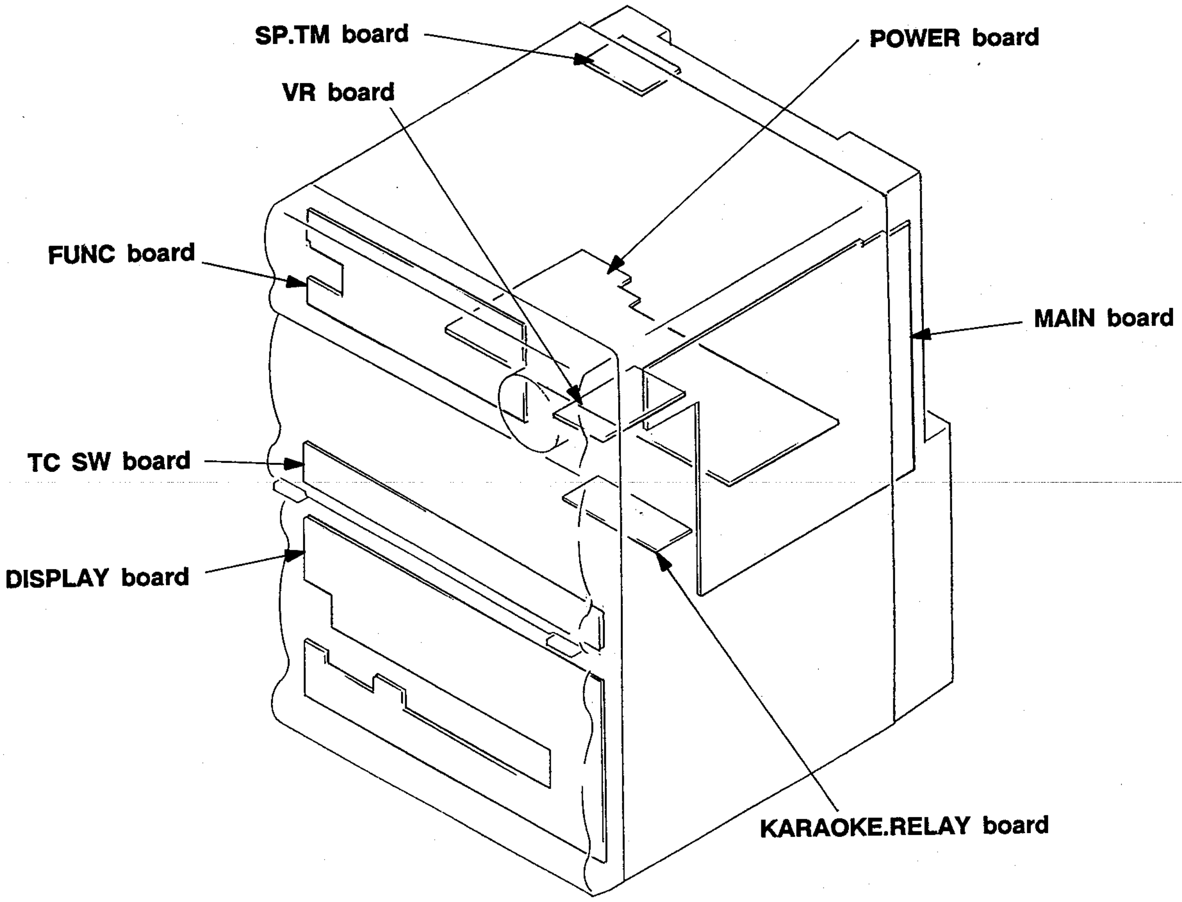
Pin No.	Pin Name	I/O	Function
46			Connected to GND.
47			
48	QINT	I	Communication data reading request (interruption request) from CD mechanism controller (μPD75516GF).
49	AUBUS IN	I	Audio bus
50			Connected to +5V.
51			
52			
53			Connected to GND.
54	VSS	–	GND
55	XTI	I	Connected to GND.
56	XT2	O	Open
57	IC		Connected to GND.
58	X1	I	Connected to system clock (4.19MHz) oscillator.
59	X2	O	
60	RESET	I	Reset. "L": reset.
61			Open
62			
63			
64			
65			
66			
67	P131	O	Orange LED (disc 1 to disc 5) driving. "L": Lighting.
68	P130	O	Green LED (disc 1 to disc 5) driving. "L": Lighting.
69	CMD3	I/O	Communication data 3 to/from CD mechanism controller (μPD75516GF)
70	CMD2	I/O	Communication data 2 to/from CD mechanism controller (μPD75516GF)
71	CMD1	I/O	Communication data 1 to/from CD mechanism controller (μPD75516GF)
72	CMD0	I/O	Communication data 0 to/from CD mechanism controller (μPD75516GF)
73	AVSS	–	GND
74			Connected to GND.
75			
76			
77			
78	KEY3	I	Not used. (Connected to +5V.)
79	KEY2	I	Key input 2 *1
80	KEY1	I	Key input 1 *1

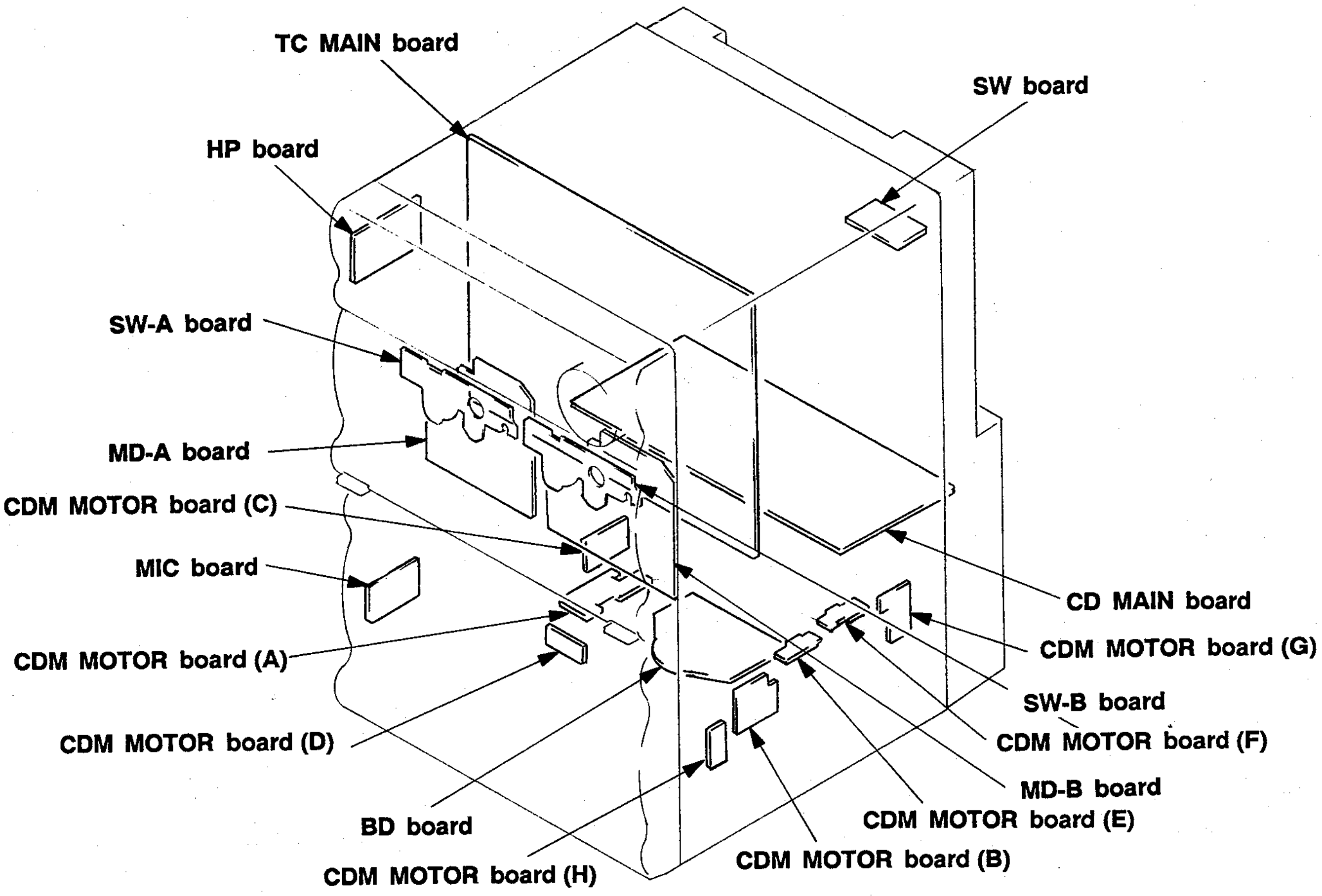
*1

Voltage (Vdc)	0.0	0.6	1.3	2.0	2.6	3.2	3.8	4.4	5.0
KEY0	PLAY	PAUSE	STOP	EJECT-1	EJECT-2	EJECT-3	EJECT-4	EJECT-5	No input
KEY1	⏭/⏩	EDIT	DISC-1	DISC-2	DISC-3	DISC-4	DISC-5		No input
KEY2	⏮/⏪	M.SCAN	REPEAT	PROGRAM	SHUFFLE	CONTINUE	CLEAR	CHECK	No input

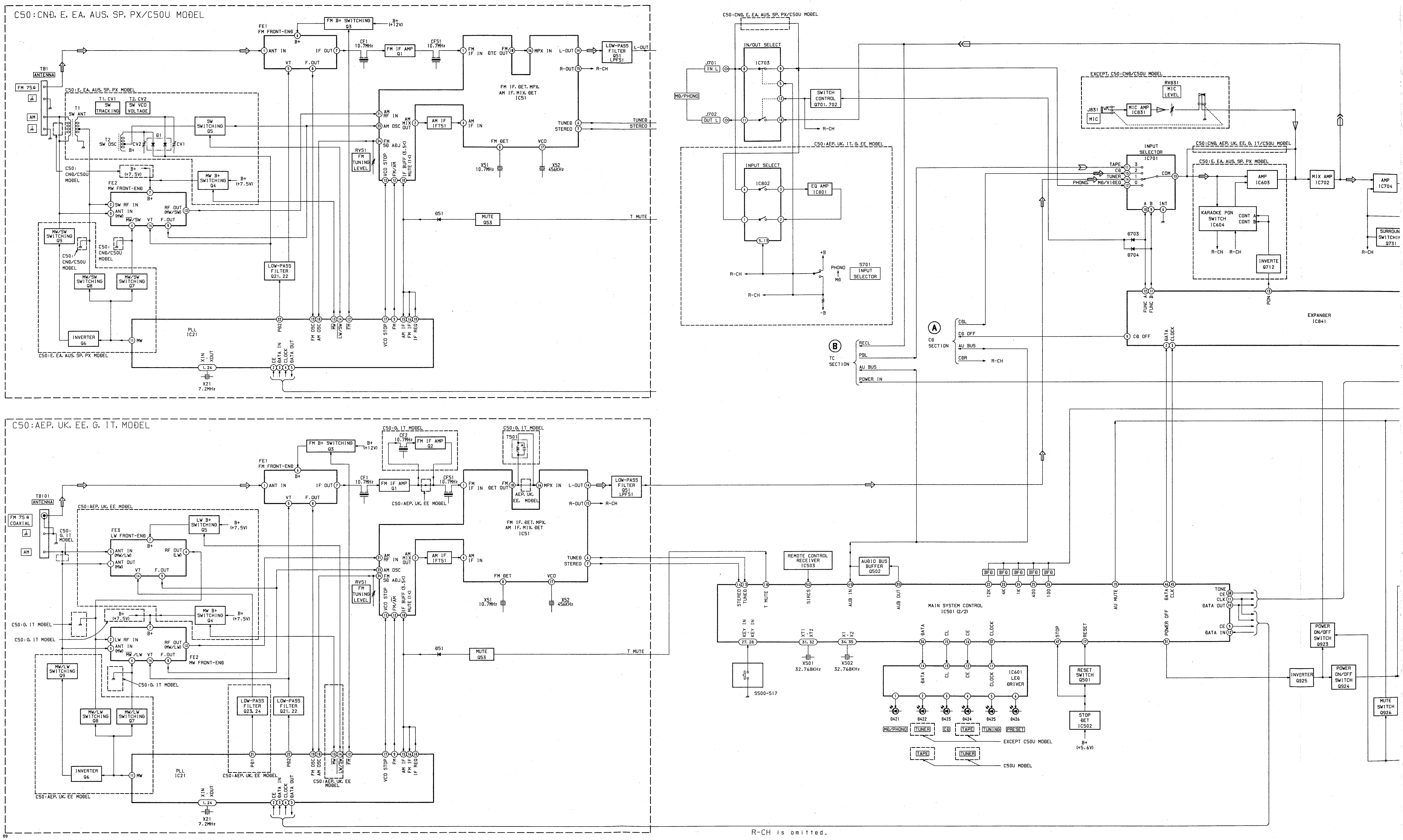
SECTION 7
DIAGRAMS

7-1. CIRCUIT BOARDS LOCATION

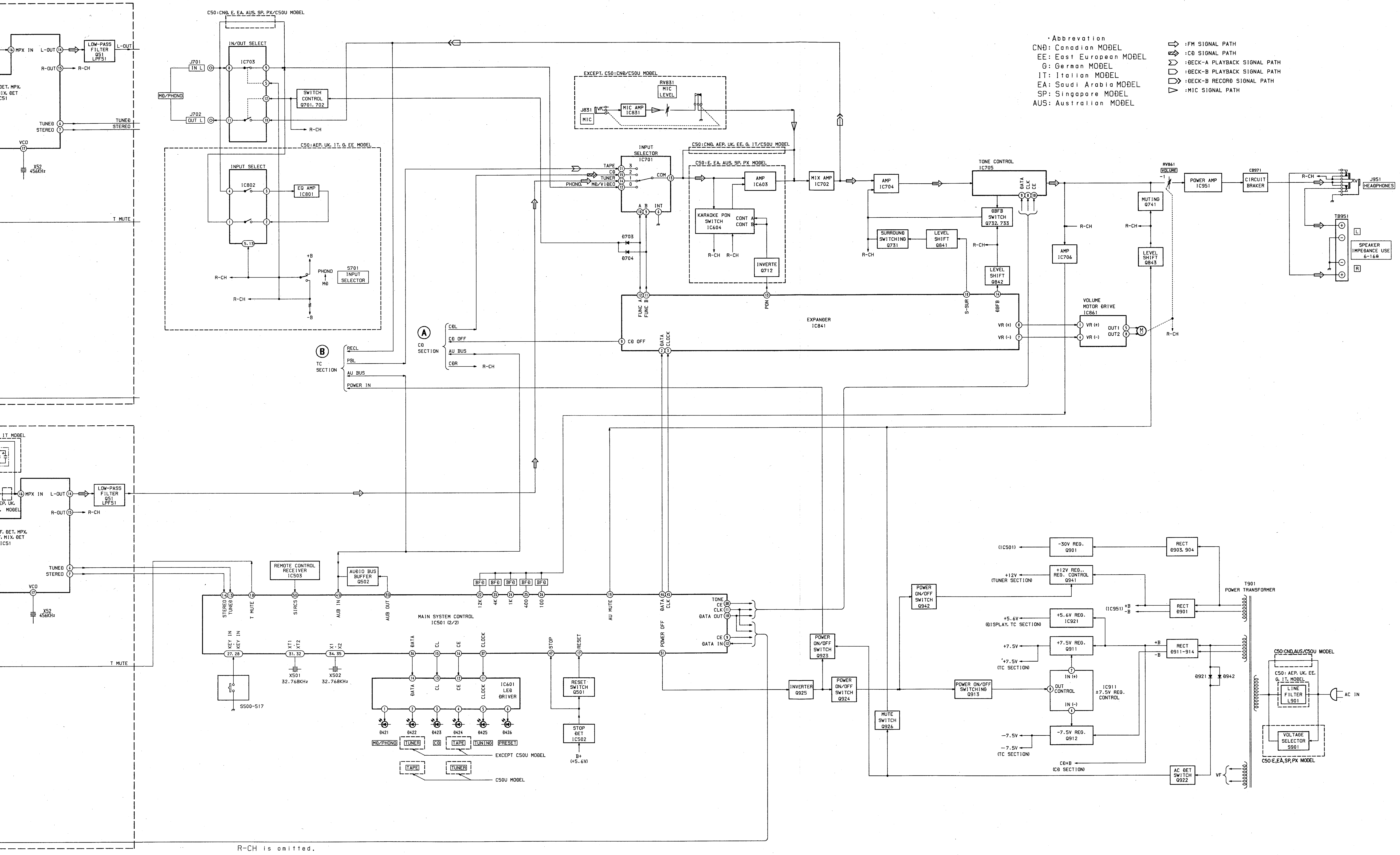

SP.TM board
VR board
POWER board
FUNC board
MAIN board
TC SW board
DISPLAY board
KARAOKE.RELAY board


TC MAIN board
SW board
HP board
SW-A board
MD-A board
CDM MOTOR board (C)
MIC board
CD MAIN board
CDM MOTOR board (G)
CDM MOTOR board (A)
SW-B board
CDM MOTOR board (D)
CDM MOTOR board (F)
MD-B board
BD board
CDM MOTOR board (E)
CDM MOTOR board (B)
CDM MOTOR board (H)

7-2. BLOCK DIAGRAM —MAIN SECTION —


C50:CND, E, EA, AUS, SP, PX/C50U MODEL
FM B+ SWITCHING Q3
FE1 FM FRONT-END
FM IF AMP Q1
CF1 10.7MHz
CF51 10.7MHz
FM IF DET, MPX, AM IF, MIX, DET IC51
LOW-PASS FILTER Q51 LPF51
TB1 ANTENNA
FM 75Ω
AM
C50:E, EA, AUS, SP, PX MODEL
T1, CV1 SW TRACKING
T2, CV2 SW VCO VOLTAGE
SW SWITCHING Q5
MW B+ SWITCHING Q4
FE2 MW FRONT-END
AM IF IFT51
RV51 FM TUNING LEVEL
X51 10.7MHz
X52 456kHz
MUTE Q53
D51
T MUTE
MW/SW SWITCHING Q9
MW/SW SWITCHING Q8
MW/SW SWITCHING Q7
LOW-PASS FILTER Q21, 22
INVERTER Q6
PLL IC21
X21 7.2MHz
C50:AEP, UK, EE, G, IT, MODEL
TB101 ANTENNA
FM 75Ω COAXIAL
FE3 LW FRONT-END
LW B+ SWITCHING Q5
MW/LW SWITCHING Q9
MW/LW SWITCHING Q8
MW/LW SWITCHING Q7
LOW-PASS FILTER Q23, 24
FM IF AMP Q2
CF2 10.7MHz
C50:G, IT MODEL
C50:AEP, UK, EE MODEL
IN/OUT SELECT IC703
J701 IN L
J702 OUT L
MD/PHONO
SWITCH CONTROL Q701, 702
INPUT SELECT IC802
EQ AMP IC801
S701 INPUT SELECTOR
PHONO
MD
C50:AEP, UK, IT, G, EE MODEL
EXCEPT, C50:CND/C50U MODEL
J831 MIC
MIC AMP IC831
RV831 MIC LEVEL
INPUT SELECTOR IC701
TAPE
CD
TUNER
PHONO, MD/VIDEO
D703
D704
C50:CND, AEP, UK, EE, G, IT/C50U MODEL
C50:E, EA, AUS, SP, PX MODEL
AMP IC603
KARAOKE PON SWITCH IC604
INVERTE Q712
MIX AMP IC702
AMP IC704
SURROUN SWITCHI Q731
EXPANDER IC841
Ⓐ CD SECTION
Ⓑ TC SECTION
RECL
PBL
AU BUS
POWER IN
COL
CD OFF
COR
REMOTE CONTROL RECEIVER IC503
AUDIO BUS BUFFER Q502
MAIN SYSTEM CONTROL IC501 (2/2)
S500-S17
X501 32.768kHz
X502 32.768kHz
IC601 LED DRIVER
D421
D422
D423
D424
D425
D426
MD/PHONO
TUNER
CD
TAPE
TUNING
PRESET
EXCEPT C50U MODEL
C50U MODEL
RESET SWITCH Q501
STOP DET IC502
B+ (+5.6V)
POWER ON/OFF SWITCH Q923
POWER ON/OFF SWITCH Q924
INVERTER Q925
MUTE SWITCH Q926
09

R-CH is omitted.

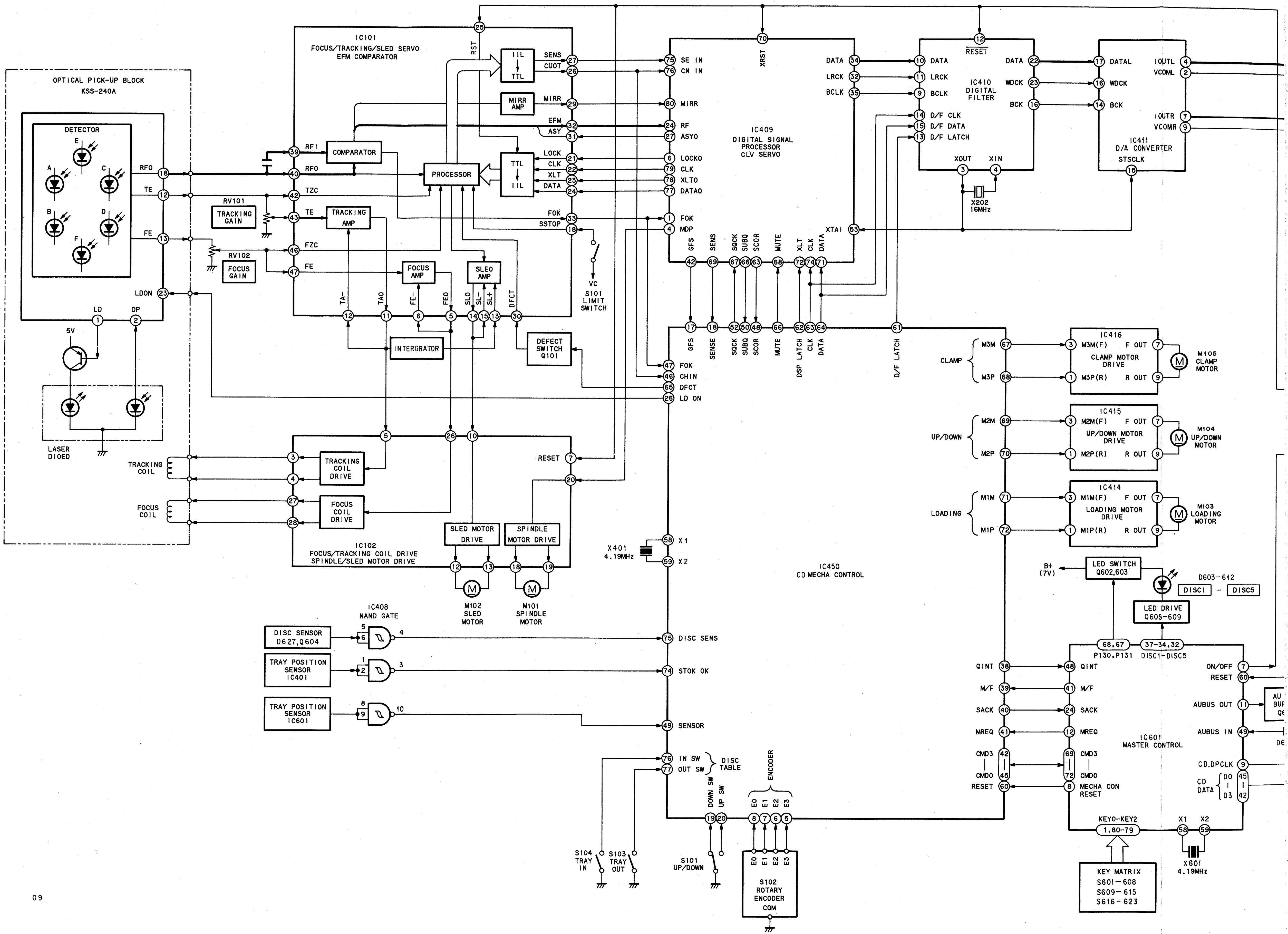

C50:CND, E, EA, AUS, SP, PX/C50U MODEL
IN/OUT SELECT
IC703
J701 IN L
J702 OUT L
MD/PHONO
SWITCH CONTROL Q701, 702
R-CH
C50:AEP, UK, IT, G, EE MODEL
INPUT SELECT
IC802
EQ AMP IC801
PHONO
MD
S701 INPUT SELECTOR
+B
-B
MPX IN
L-OUT
R-OUT
LOW-PASS FILTER Q51 LPF51
TUNED
STEREO
VCO
X52 456kHz
T MUTE
EXCEPT C50:CND/C50U MODEL
RV831 MIC LEVEL
J831
MIC
MIC AMP IC831
INPUT SELECTOR IC701
TAPE
CD
TUNER
PHONO, MD/VIDEO
COM
A B INT
D703
D704
C50:CND, AEP, UK, EE, G, IT/C50U MODEL
C50:E, EA, AUS, SP, PX MODEL
AMP IC603
KARAOKE PON SWITCH IC604
CONT A
CONT B
INVERTE Q712
MIX AMP IC702
AMP IC704
TONE CONTROL IC705
DATA CLK CE
DBFB SWITCH Q732, 733
SURROUND SWITCHING Q731
LEVEL SHIFT Q841
LEVEL SHIFT Q842
AMP IC706
RV861 VOLUME
MUTING Q741
LEVEL SHIFT Q843
POWER AMP IC951
CB971 CIRCUIT BRAKER
J951 HEADPHONES
TB951
SPEAKER IMPEDANCE USE 6-16Ω
L
R
EXPANDER IC841
FUNC A
FUNC B
PON
S-SUR
DBFB
VR (+)
VR (-)
CD OFF
DATA
CLOCK
VOLUME MOTOR DRIVE IC861
OUT1
OUT2
M
Ⓐ CD SECTION
CDL
CD OFF
AU BUS
CDR
Ⓑ TC SECTION
RECL
PBL
AU BUS
POWER IN
REMOTE CONTROL RECEIVER IC503
AUDIO BUS BUFFER Q502
BFD
STEREO
TUNED
T MUTE
SIRCS
AUB IN
AUB OUT
12K
4K
1K
400
100
AU MUTE
DATA
CLK
TONE CE
CLK
DATA OUT
CE
DATA IN
MAIN SYSTEM CONTROL IC501 (2/2)
KEY IN
KEY IN
XT1 XT2
X1 X2
DATA
CL
CE
CLOCK
STOP
RESET
POWER OFF
S500-517
X501 32.768KHz
X502 32.768KHz
IC601 LED DRIVER
D421 D422 D423 D424 D425 D426
MD/PHONO
TUNER
CD
TAPE
TUNING
PRESET
EXCEPT C50U MODEL
C50U MODEL
RESET SWITCH Q501
STOP DET IC502
B+ (+5.6V)
POWER ON/OFF SWITCH Q923
INVERTER Q925
POWER ON/OFF SWITCH Q924
MUTE SWITCH Q926
POWER ON/OFF SWITCH Q942
POWER ON/OFF SWITCHING Q913
(IC501)
-30V REG. Q901
+12V (TUNER SECTION)
+12V REG., REG. CONTROL Q941
+5.6V (DISPLAY, TC SECTION)
+5.6V REG. IC921
+7.5V
+7.5V (TC SECTION)
+7.5V REG. Q911
IC911 ±7.5V REG. CONTROL
IN (+)
OUT CONTROL
IN (-)
-7.5V
-7.5V (TC SECTION)
-7.5V REG. Q912
CD+B (CD SECTION)
RECT D903, 904
(IC951)
RECT D901
RECT D911-914
D921
D942
AC DET SWITCH Q922
VF
T901 POWER TRANSFORMER
C50:CND,AUS,C50U MODEL
C50: AEP, UK, EE, G, IT, MODEL
LINE FILTER L901
VOLTAGE SELECTOR S901
C50:E,EA,SP,PX MODEL
AC IN

·Abbrevation
CND: Canadian MODEL
EE: East European MODEL
G: German MODEL
IT: Italian MODEL
EA: Saudi Arabia MODEL
SP: Singapore MODEL
AUS: Australian MODEL

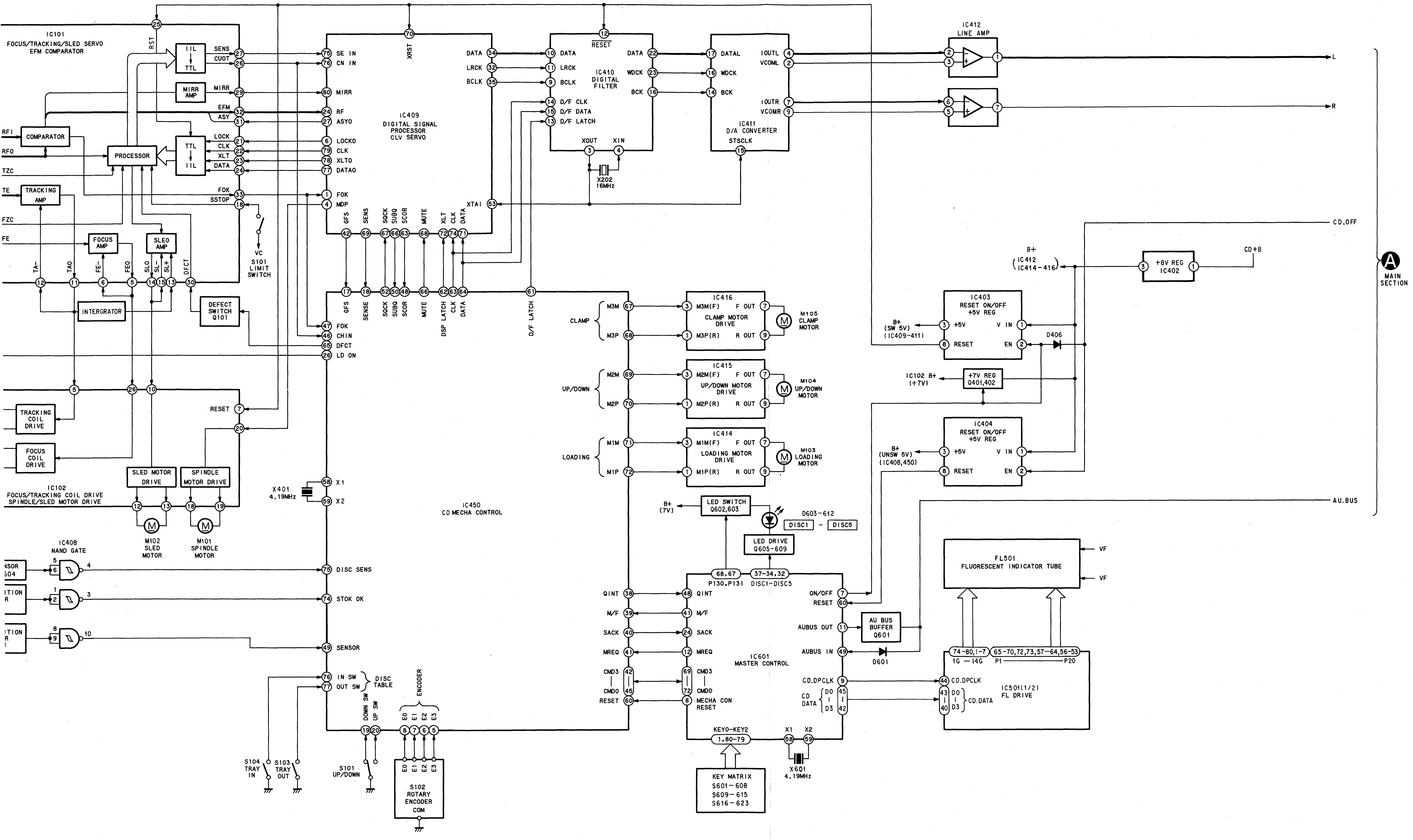
⇨ :FM SIGNAL PATH
⇨ :CD SIGNAL PATH
▷ :DECK-A PLAYBACK SIGNAL PATH
▷ :DECK-B PLAYBACK SIGNAL PATH
⇨ :DECK-B RECORD SIGNAL PATH
▷ :MIC SIGNAL PATH

R-CH is omitted.

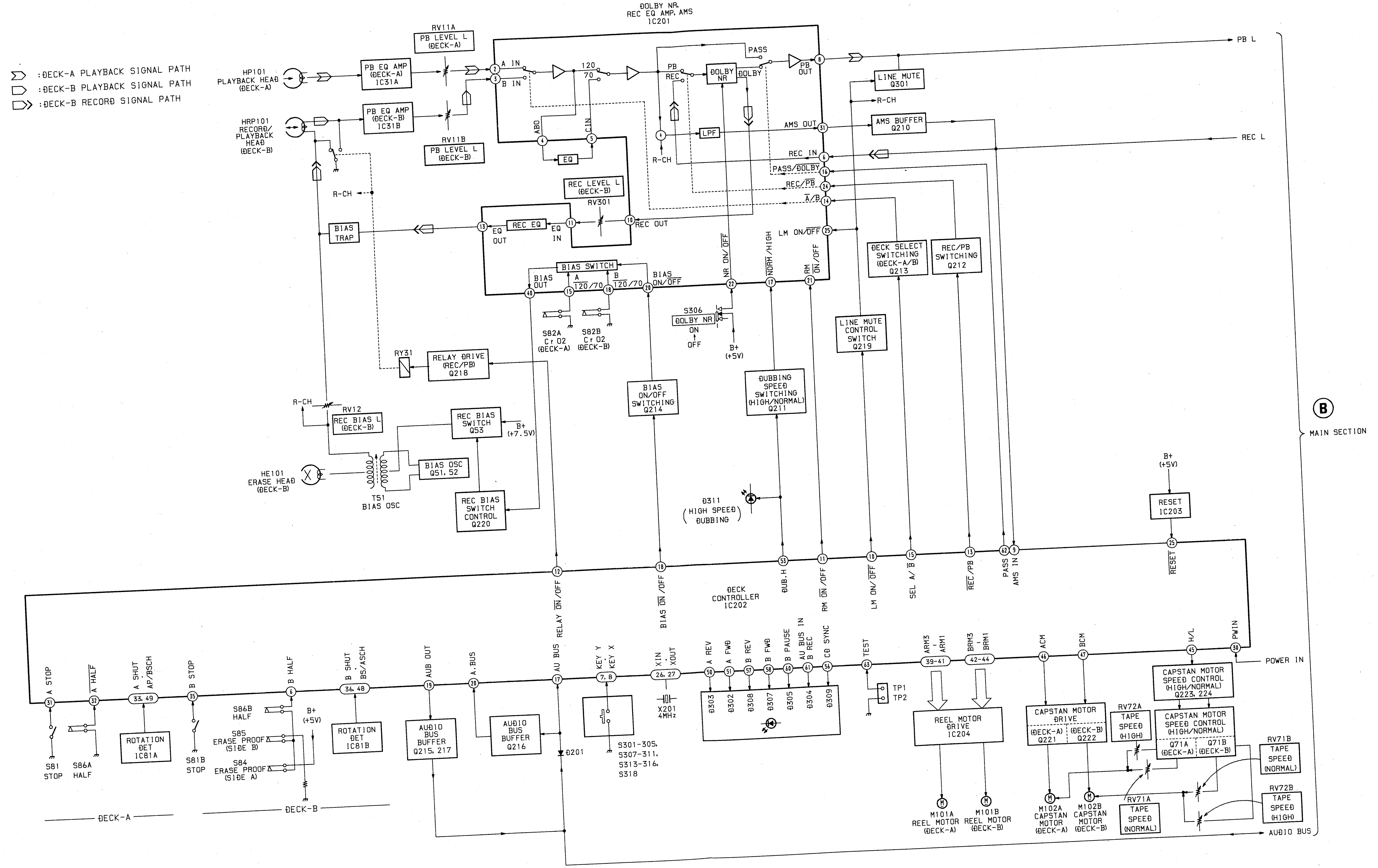
7-3. BLOCK DIAGRAM —CD/DISPLAY SECTION—


OPTICAL PICK-UP BLOCK
KSS-240A
DETECTOR
A
B
C
D
E
F
RFO
TE
FE
LDON
LD
DP
5V
LASER DIOED
TRACKING COIL
FOCUS COIL
IC101
FOCUS/TRACKING/SLED SERVO
EFM COMPARATOR
RST
RFI
RFO
TZC
TE
FZC
FE
RV101
TRACKING GAIN
RV102
FOCUS GAIN
COMPARATOR
PROCESSOR
TRACKING AMP
FOCUS AMP
SLEO AMP
INTERGRATOR
IIL → TTL
MIRR AMP
TTL → IIL
SENS
CUOT
MIRR
EFM
ASY
LOCK
CLK
XLT
DATA
FOK
SSTOP
TA-
TAO
FE-
FEO
SLO
SL-
SL+
DFCT
DEFECT SWITCH Q101
VC
S101 LIMIT SWITCH
IC102
FOCUS/TRACKING COIL DRIVE
SPINDLE/SLED MOTOR DRIVE
TRACKING COIL DRIVE
FOCUS COIL DRIVE
SLED MOTOR DRIVE
SPINDLE MOTOR DRIVE
RESET
M102 SLED MOTOR
M101 SPINDLE MOTOR
IC409
DIGITAL SIGNAL PROCESSOR
CLV SERVO
SE IN
CN IN
MIRR
RF
ASYO
LOCKO
CLK
XLTO
DATAO
FOK
MDP
XRST
DATA
LRCK
BCLK
XTAI
GFS
SENS
SQCK
SUBQ
SCOR
MUTE
XLT
CLK
DATA
IC410
DIGITAL FILTER
RESET
DATA
LRCK
BCLK
D/F CLK
D/F DATA
D/F LATCH
WDCK
BCK
XOUT
XIN
X202 16MHz
IC411
D/A CONVERTER
DATAL
WDCK
BCK
STSCLK
IOUTL
VCOML
IOUTR
VCOMR
IC450
CD MECHA CONTROL
GFS
SENSE
SQCK
SUBQ
SCOR
MUTE
DSP LATCH
CLK
DATA
D/F LATCH
FOK
CHIN
DFCT
LD ON
X1
X2
X401 4.19MHz
DISC SENS
STOK OK
SENSOR
IN SW
OUT SW
DISC TABLE
DOWN SW
UP SW
ENCODER
E0 E1 E2 E3
S104 TRAY IN
S103 TRAY OUT
S101 UP/DOWN
S102 ROTARY ENCODER
COM
IC408 NAND GATE
DISC SENSOR D627,Q604
TRAY POSITION SENSOR IC401
TRAY POSITION SENSOR IC601
CLAMP
M3M
M3P
UP/DOWN
M2M
M2P
LOADING
M1M
M1P
IC416
M3M(F) F OUT
CLAMP MOTOR DRIVE
M3P(R) R OUT
M105 CLAMP MOTOR
IC415
M2M(F) F OUT
UP/DOWN MOTOR DRIVE
M2P(R) R OUT
M104 UP/DOWN MOTOR
IC414
M1M(F) F OUT
LOADING MOTOR DRIVE
M1P(R) R OUT
M103 LOADING MOTOR
B+ (7V)
LED SWITCH Q602,603
D603-612
DISC1 - DISC5
LED DRIVE Q605-609
68,67
37-34,32
P130,P131
DISC1-DISC5
QINT
M/F
SACK
MREQ
CMD3
CMD0
RESET
MECHA CON RESET
IC601
MASTER CONTROL
ON/OFF
RESET
AUBUS OUT
AUBUS IN
CD.DPCLK
CD DATA
D0
D3
KEY0-KEY2
1,80-79
X1
X2
X601 4.19MHz
KEY MATRIX
S601-608
S609-615
S616-623

09

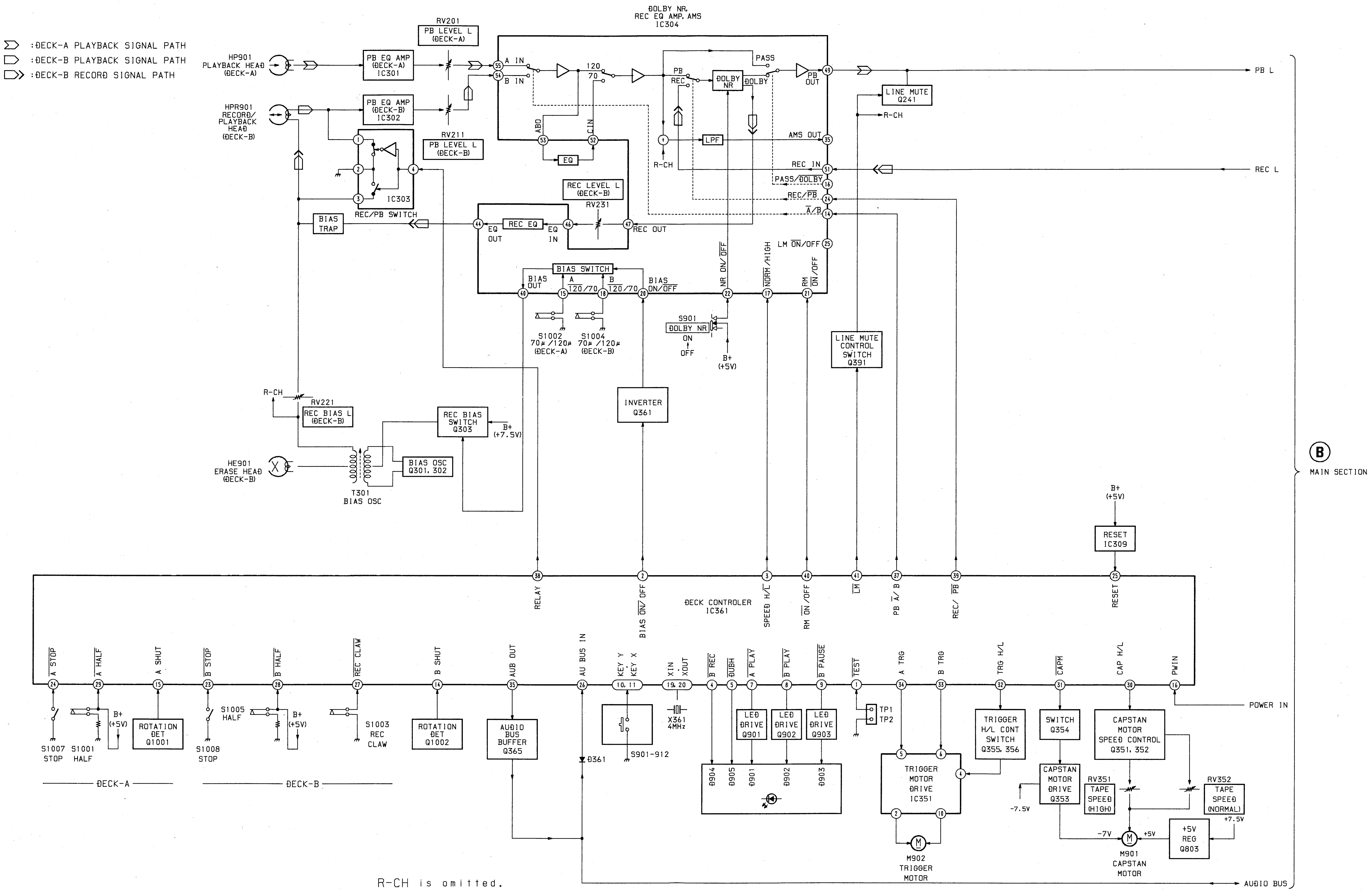

IC101
FOCUS/TRACKING/SLED SERVO
EFM COMPARATOR
RFI
RFO
TZC
TE
FZC
FE
COMPARATOR
PROCESSOR
TRACKING AMP
FOCUS AMP
SLED AMP
MIRR AMP
IIL → TTL
TTL → IIL
INTERGRATOR
DEFECT SWITCH Q101
S101 LIMIT SWITCH
VC
RST
SENS
CUOT
MIRR
EFM
ASY
LOCK
CLK
XLT
DATA
FOK
SSTOP
TA-
TAO
FE-
FEO
SLO
SL-
SL+
DFCT
IC409
DIGITAL SIGNAL PROCESSOR
CLV SERVO
SE IN
CN IN
RF
ASYO
LOCKO
XLTO
DATAO
MDP
XRST
LRCK
BCLK
XTAI
GFS
SQCK
SUBQ
SCOR
MUTE
IC410
DIGITAL FILTER
RESET
D/F CLK
D/F DATA
D/F LATCH
XOUT
XIN
WDCK
BCK
X202 16MHz
IC411
D/A CONVERTER
DATAL
IOUTL
VCOML
IOUTR
VCOMR
STSCLK
IC412
LINE AMP
L
R
IC450
CD MECHA CONTROL
SENSE
DSP LATCH
D/F LATCH
CHIN
LD ON
X1
X2
X401 4.19MHz
DISC SENS
STOK OK
SENSOR
IN SW
OUT SW
DISC TABLE
DOWN SW
UP SW
ENCODER
E0 E1 E2 E3
S104 TRAY IN
S103 TRAY OUT
S101 UP/DOWN
S102 ROTARY ENCODER
COM
IC102
FOCUS/TRACKING COIL DRIVE
SPINDLE/SLED MOTOR DRIVE
TRACKING COIL DRIVE
FOCUS COIL DRIVE
SLED MOTOR DRIVE
SPINDLE MOTOR DRIVE
M102 SLED MOTOR
M101 SPINDLE MOTOR
IC408
NAND GATE
CLAMP
UP/DOWN
LOADING
M3M
M3P
M2M
M2P
M1M
M1P
IC416
CLAMP MOTOR DRIVE
M3M(F)
M3P(R)
F OUT
R OUT
M105 CLAMP MOTOR
IC415
UP/DOWN MOTOR DRIVE
M2M(F)
M2P(R)
M104 UP/DOWN MOTOR
IC414
LOADING MOTOR DRIVE
M1M(F)
M1P(R)
M103 LOADING MOTOR
B+ (7V)
LED SWITCH Q602,603
D603-612
DISC1 - DISC5
LED DRIVE Q605-609
68,67 P130,P131
37-34,32 DISC1-DISC5
QINT
M/F
SACK
MREQ
CMD3
CMD0
MECHA CON RESET
IC601
MASTER CONTROL
ON/OFF
AUBUS OUT
AUBUS IN
AU BUS BUFFER Q601
D601
CD.DPCLK
CD DATA
D0 D3
KEY0-KEY2 1,80-79
X601 4.19MHz
KEY MATRIX
S601-608
S609-615
S616-623
FL501
FLUORESCENT INDICATOR TUBE
VF
74-80,1-7 1G-14G
65-70,72,73,57-64,56-53 P1-P20
IC501(1/2)
FL DRIVE
CD.DATA
CD.OFF
B+
IC412
IC414-416
+8V REG IC402
CD+B
IC403
RESET ON/OFF +5V REG
+5V
V IN
EN
B+ (SW 5V) (IC409-411)
D406
IC102 B+ (+7V)
+7V REG Q401,402
IC404
B+ (UNSW 5V) (IC408,450)
AU.BUS
A MAIN SECTION

7-4. BLOCK DIAGRAM —DECK (HCD-C50) SECTION —


:DECK-A PLAYBACK SIGNAL PATH
:DECK-B PLAYBACK SIGNAL PATH
:DECK-B RECORD SIGNAL PATH
HP101 PLAYBACK HEAD (DECK-A)
HRP101 RECORD/PLAYBACK HEAD (DECK-B)
HE101 ERASE HEAD (DECK-B)
PB EQ AMP (DECK-A) IC31A
PB EQ AMP (DECK-B) IC31B
RV11A PB LEVEL L (DECK-A)
RV11B PB LEVEL L (DECK-B)
DOLBY NR, REC EQ AMP, AMS IC201
A IN
B IN
120
70
PASS
PB
REC
DOLBY NR
DOLBY
PB OUT
AMS OUT
LPF
R-CH
REC IN
PASS/DOLBY
REC/PB
A/B
LM ON/OFF
REC LEVEL L (DECK-B) RV301
REC EQ
EQ OUT
EQ IN
REC OUT
ABO
CIN
EQ
BIAS SWITCH
BIAS OUT
A 120/70
B 120/70
BIAS ON/OFF
NR ON/OFF
NORM/HIGH
RM ON/OFF
BIAS TRAP
R-CH
RY31
RELAY DRIVE (REC/PB) Q218
RV12 REC BIAS L (DECK-B)
REC BIAS SWITCH Q53
B+ (+7.5V)
BIAS OSC Q51, 52
T51 BIAS OSC
REC BIAS SWITCH CONTROL Q220
S82A Cr O2 (DECK-A)
S82B Cr O2 (DECK-B)
S306 DOLBY NR ON OFF
B+ (+5V)
BIAS ON/OFF SWITCHING Q214
DUBBING SPEED SWITCHING (HIGH/NORMAL) Q211
D311 (HIGH SPEED DUBBING)
LINE MUTE Q301
R-CH
AMS BUFFER Q210
PB L
REC L
DECK SELECT SWITCHING (DECK-A/B) Q213
REC/PB SWITCHING Q212
LINE MUTE CONTROL SWITCH Q219
B MAIN SECTION
B+ (+5V)
RESET IC203
RESET
DECK CONTROLLER IC202
RELAY ON/OFF
BIAS ON/OFF
DUB.H
RM ON/OFF
LM ON/OFF
SEL A/B
REC/PB
PASS
AMS IN
A STOP
A HALF
A SHUT · AP/BSCH
B STOP
B HALF
B SHUT · BS/ASCH
AUB OUT
A.BUS
AU BUS
KEY Y · KEY X
XIN · XOUT
A REV
A FWD
B REV
B FWD
B PAUSE
AU BUS IN · B REC
CD SYNC
TEST
ARM3 - ARM1
BRM3 - BRM1
ACM
BCM
H/L
PWIN
POWER IN
S81 STOP
S86A HALF
ROTATION DET IC81A
S81B STOP
S86B HALF
S85 ERASE PROOF (SIDE B)
S84 ERASE PROOF (SIDE A)
B+ (+5V)
ROTATION DET IC81B
AUDIO BUS BUFFER Q215, 217
AUDIO BUS BUFFER Q216
D201
S301-305, S307-311, S313-316, S318
X201 4MHz
D303 D302 D308 D307 D305 D304 D309
TP1 TP2
REEL MOTOR DRIVE IC204
M101A REEL MOTOR (DECK-A)
M101B REEL MOTOR (DECK-B)
CAPSTAN MOTOR DRIVE (DECK-A) Q221 (DECK-B) Q222
M102A CAPSTAN MOTOR (DECK-A)
M102B CAPSTAN MOTOR (DECK-B)
RV72A TAPE SPEED (HIGH)
RV71A TAPE SPEED (NORMAL)
CAPSTAN MOTOR SPEED CONTROL (HIGH/NORMAL) Q223, 224
CAPSTAN MOTOR SPEED CONTROL (HIGH/NORMAL) Q71A (DECK-A) Q71B (DECK-B)
RV71B TAPE SPEED (NORMAL)
RV72B TAPE SPEED (HIGH)
AUDIO BUS
DECK-A
DECK-B

R-CH is omitted.

7-5. BLOCK DIAGRAM —DECK (HCD-C50U) SECTION —


:DECK-A PLAYBACK SIGNAL PATH
:DECK-B PLAYBACK SIGNAL PATH
:DECK-B RECORD SIGNAL PATH
HP901 PLAYBACK HEAD (DECK-A)
HPR901 RECORD/PLAYBACK HEAD (DECK-B)
HE901 ERASE HEAD (DECK-B)
PB EQ AMP (DECK-A) IC301
PB EQ AMP (DECK-B) IC302
RV201 PB LEVEL L (DECK-A)
RV211 PB LEVEL L (DECK-B)
IC303
REC/PB SWITCH
BIAS TRAP
DOLBY NR, REC EQ AMP, AMS IC304
A IN
B IN
120
70
ABO
CIN
EQ
PB
REC
DOLBY NR
DOLBY
PASS
PB OUT
LPF
AMS OUT
R-CH
REC IN
PASS/DOLBY
REC/PB
A/B
LM ON/OFF
REC LEVEL L (DECK-B) RV231
REC EQ
EQ OUT
EQ IN
REC OUT
BIAS SWITCH
BIAS OUT
A 120/70
B 120/70
BIAS ON/OFF
NR ON/OFF
NORM/HIGH
RM ON/OFF
S1002 70μ/120μ (DECK-A)
S1004 70μ/120μ (DECK-B)
S901 DOLBY NR ON OFF
B+ (+5V)
LINE MUTE Q241
R-CH
PB L
REC L
LINE MUTE CONTROL SWITCH Q391
R-CH
RV221 REC BIAS L (DECK-B)
REC BIAS SWITCH Q303
B+ (+7.5V)
BIAS OSC Q301, 302
T301 BIAS OSC
INVERTER Q361
B MAIN SECTION
B+ (+5V)
RESET IC309
DECK CONTROLER IC361
RELAY
BIAS ON/OFF
SPEED H/L
RM ON/OFF
LM
PB A/B
REC/PB
RESET
A STOP
A HALF
A SHUT
B STOP
B HALF
REC CLAW
B SHUT
AUB OUT
AU BUS IN
KEY Y KEY X
XIN XOUT
B REC
DUBH
A PLAY
B PLAY
B PAUSE
TEST
A TRG
B TRG
TRG H/L
CAPH
CAP H/L
PWIN
POWER IN
S1007 STOP
S1001 HALF
B+ (+5V)
ROTATION DET Q1001
S1008 STOP
S1005 HALF
B+ (+5V)
S1003 REC CLAW
ROTATION DET Q1002
DECK-A
DECK-B
AUDIO BUS BUFFER Q365
D361
S901-912
X361 4MHz
LED DRIVE Q901
LED DRIVE Q902
LED DRIVE Q903
D904
D905
D901
D902
D903
TP1
TP2
TRIGGER MOTOR DRIVE IC351
M902 TRIGGER MOTOR
TRIGGER H/L CONT SWITCH Q355, 356
SWITCH Q354
-7.5V
CAPSTAN MOTOR DRIVE Q353
CAPSTAN MOTOR SPEED CONTROL Q351, 352
RV351 TAPE SPEED (HIGH)
RV352 TAPE SPEED (NORMAL)
+7.5V
-7V
+5V
+5V REG Q803
M901 CAPSTAN MOTOR
AUDIO BUS

R-CH is omitted.

09

7-6. PRINTED WIRING BOARD

• MAIN SECTION (HCD-C50 : AEP, UK, G, IT, EE)

• See page 32 for Circuit Boards Location and see page 97, 98 for Semiconductor Lead Layouts.

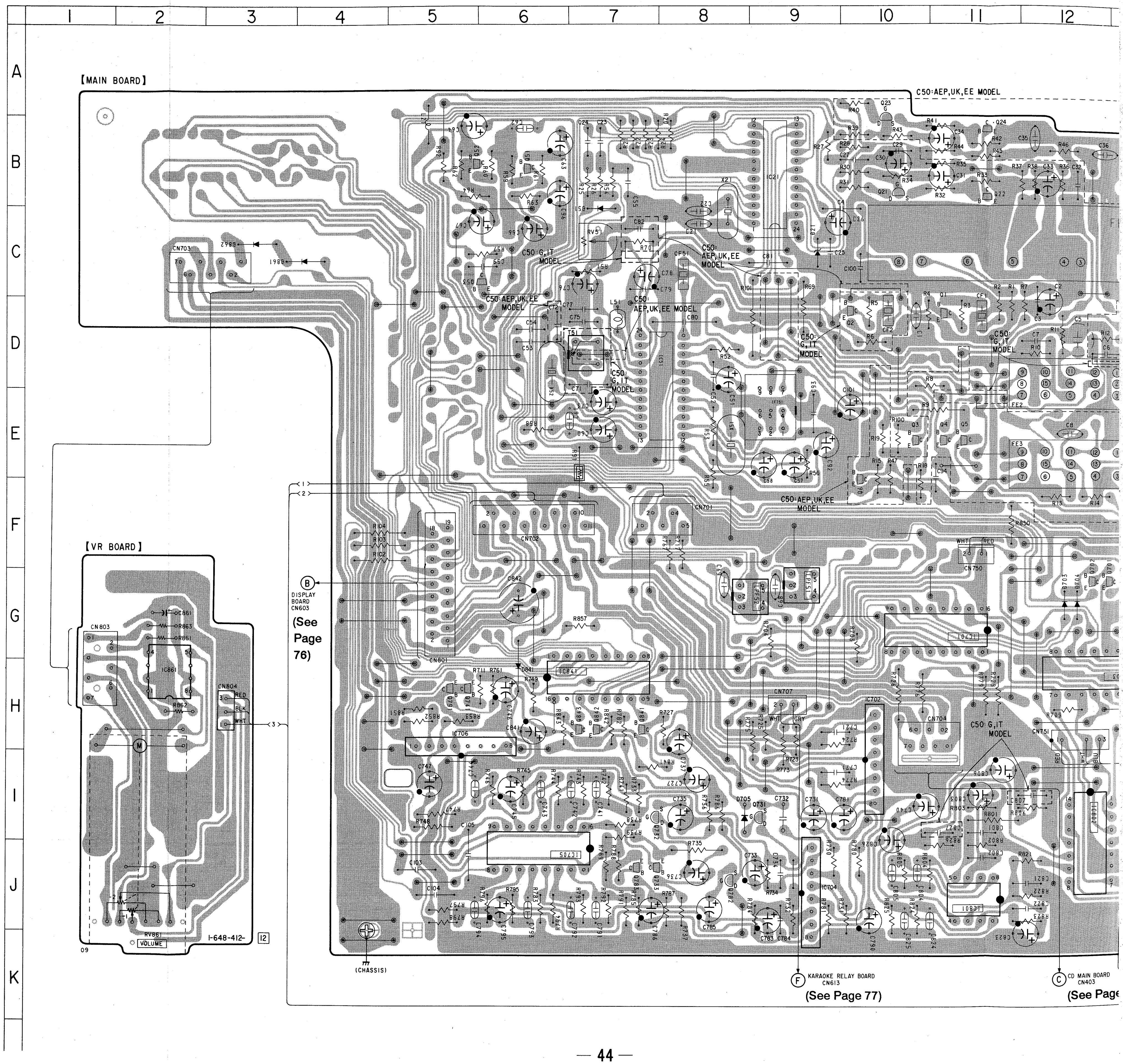
• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D21	C-9	Q1	D-11
D51	C-7	Q2	D-10
D703	G-12	Q3	E-11
D704	G-12	Q4	E-11
D705	I-9	Q5	E-11
D841	H-6	Q6	F-10
D861	C-4	Q7	D-13
D862	C-3	Q8	D-13
D901	G-22	Q9	E-13
D903	E-20	Q21	B-10
D904	E-20	Q22	C-11
D905	E-21	Q23	A-10
D906	B-16	Q24	B-11
D911	C-23	Q51	B-6
D912	C-23	Q52	B-6
D913	C-23	Q53	C-5
D914	C-23	Q701	G-13
D915	D-20	Q702	G-13
D920	E-18	Q731	I-9
D921	B-21	Q732	J-8
D922	B-16	Q733	J-8
D923	B-20	Q741	H-5
D924	A-18	Q782	J-8
D941	D-17	Q783	J-7
D942	B-23	Q791	H-5
D943	G-18	Q841	H-8
		Q842	H-7
IC21	B-9	Q843	H-7
IC51	D-8	Q901	E-21
IC701	G-11	Q911	K-20
IC702	I-11	Q912	K-18
IC703	H-14	Q913	E-18
IC704	J-9	Q922	B-20
IC705	J-7	Q923	B-19
IC706	I-6	Q924	B-17
IC801	J-11	Q925	B-16
IC802	J-13	Q926	B-20
IC841	H-7	Q941	D-17
IC861	H-2	Q942	C-17
IC911	D-20		
IC921	E-18		
IC951	H-19		

Note:

- ○—— : parts extracted from the components side.
- ⁚⁻┇ indicates side identified with part number.
- △ : internal component.
- ⁚⁚⁚⁚⁚ : Pattern on the side which is seen.

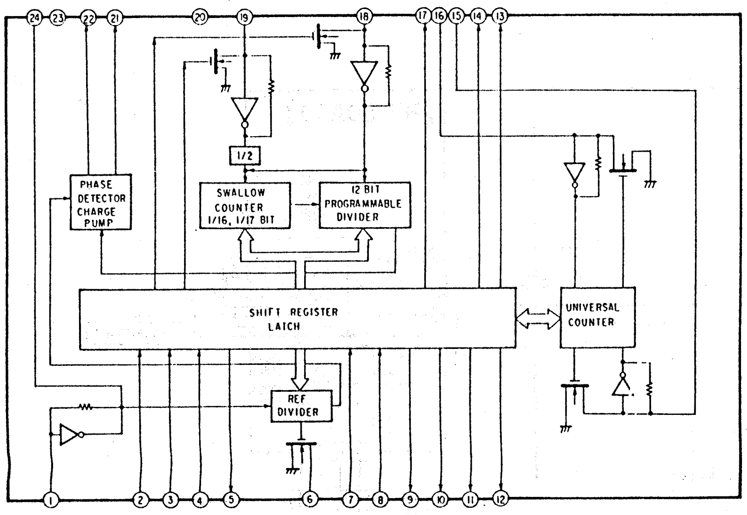
- EE : East European model
- IT : Italian model
- G : German model


1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
H
I
J
K
[MAIN BOARD]
C50:AEP,UK,EE MODEL
C50:G,IT MODEL
C50:AEP,UK,EE MODEL
C50:G,IT MODEL
[VR BOARD]
CN803
CN804
RED
BLK
WHT
IC861
RV861
VOLUME
1-648-412-
12
B
DISPLAY BOARD CN603
(See Page 76)
CN701
CN702
CN801
CN707
CN704
CN750
IC21
IC51
IC701
IC702
IC704
IC705
IC706
IC801
IC802
IC841
(CHASSIS)
F
KARAOKE RELAY BOARD CN613
(See Page 77)
C
CD MAIN BOARD CN403
(See Page

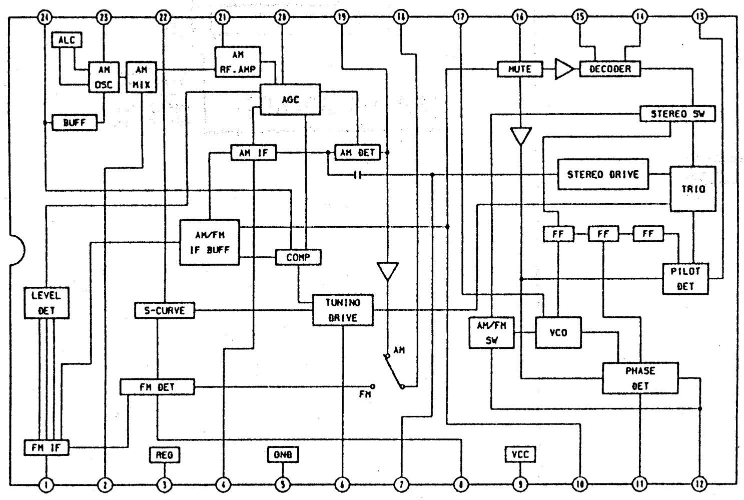
7-7. SCHEMATIC DIAGRAM
• MAIN SECTION (HCD-C50 : AEP, UK, G, IT, EE)

• IC BLOCK DIAGRAMS

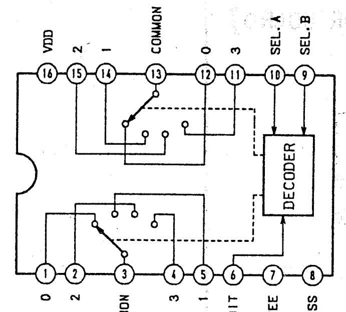
IC21 LC7218


PHASE DETECTOR CHARGE PUMP
SWALLOW COUNTER 1/16, 1/17 BIT
1/2
12 BIT PROGRAMMABLE DIVIDER
SHIFT REGISTER LATCH
UNIVERSAL COUNTER
REF DIVIDER

IC51 LA1831


ALC
AM OSC
AM MIX
AM RF.AMP
BUFF
AGC
AM IF
AM DET
MUTE
DECODER
STEREO SW
STEREO DRIVE
TRIG
AM/FM IF BUFF
COMP
FF
PILOT DET
LEVEL DET
S-CURVE
TUNING DRIVE
AM/FM SW
VCO
AM
FM
PHASE DET
FM DET
FM IF
REG
GND
VCC

IC701 MC14052

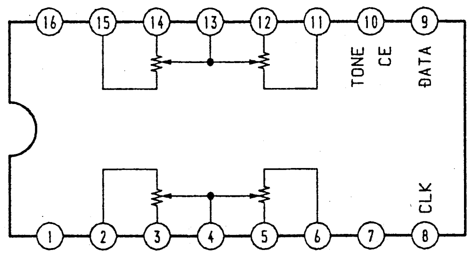

VDD
2
1
COMMON
0
3
SEL.A
SEL.B
DECODER
0
2
COMMON
3
1
INHIBIT
VEE
VSS

Note:
- All capacitors are in μF unless otherwise noted. pF:μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.

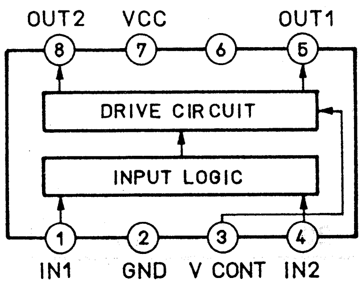
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- ▬▬ : B+ Line
- ▬ ▬ : B– Line
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : FM
- Voltages are taken with a VOM (Input impedance 10Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ⇛ : CD
  ▷ : PB
  ⊳ : REC
  ▷ : MIC
- EE : East European model
- IT : Italian model
- G : German model

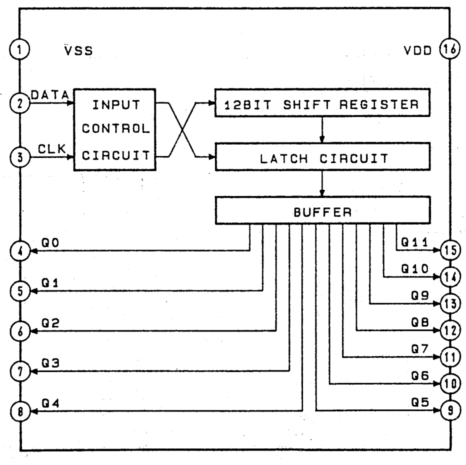
IC705 TC9184P


TONE
CE
DATA
CLK

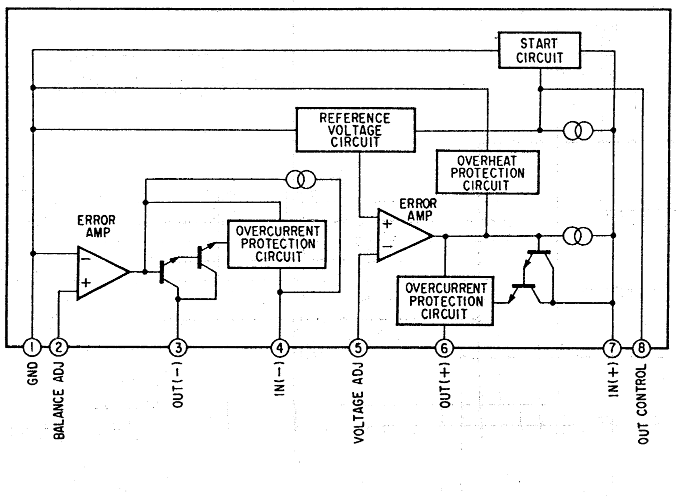
IC861 LB1639

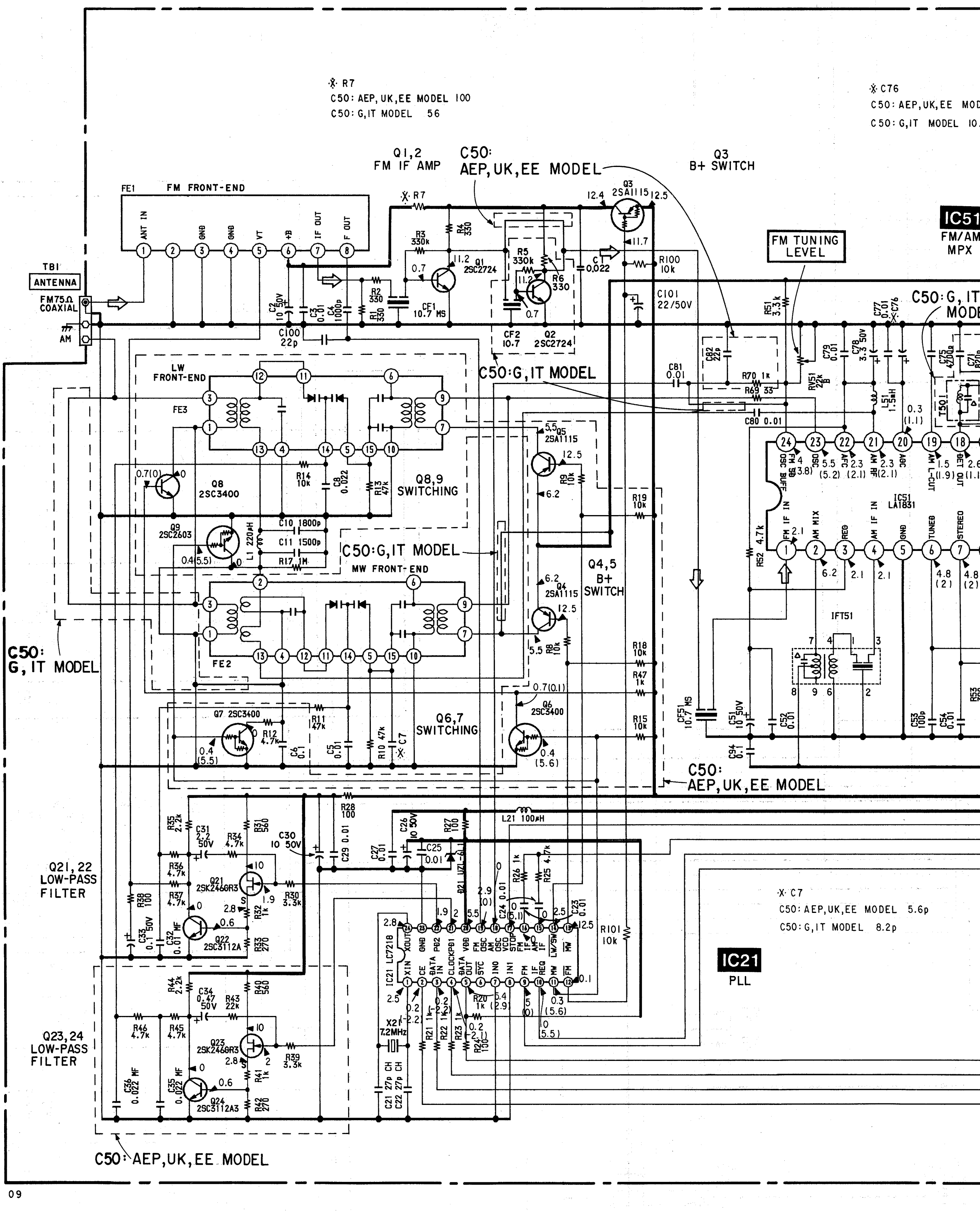

OUT2
VCC
OUT1
DRIVE CIRCUIT
INPUT LOGIC
IN1
GND
V CONT
IN2

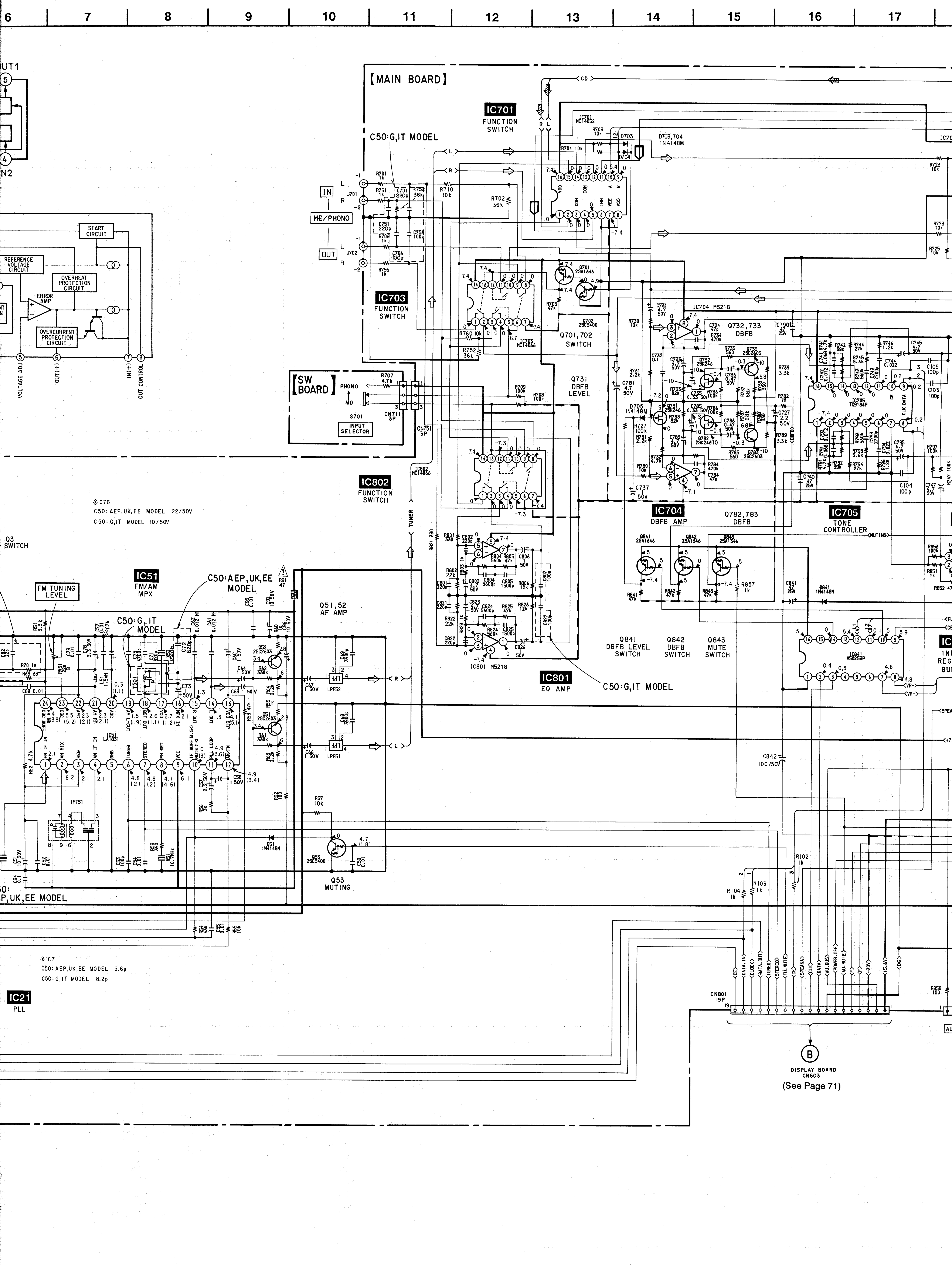
IC841 M50253P

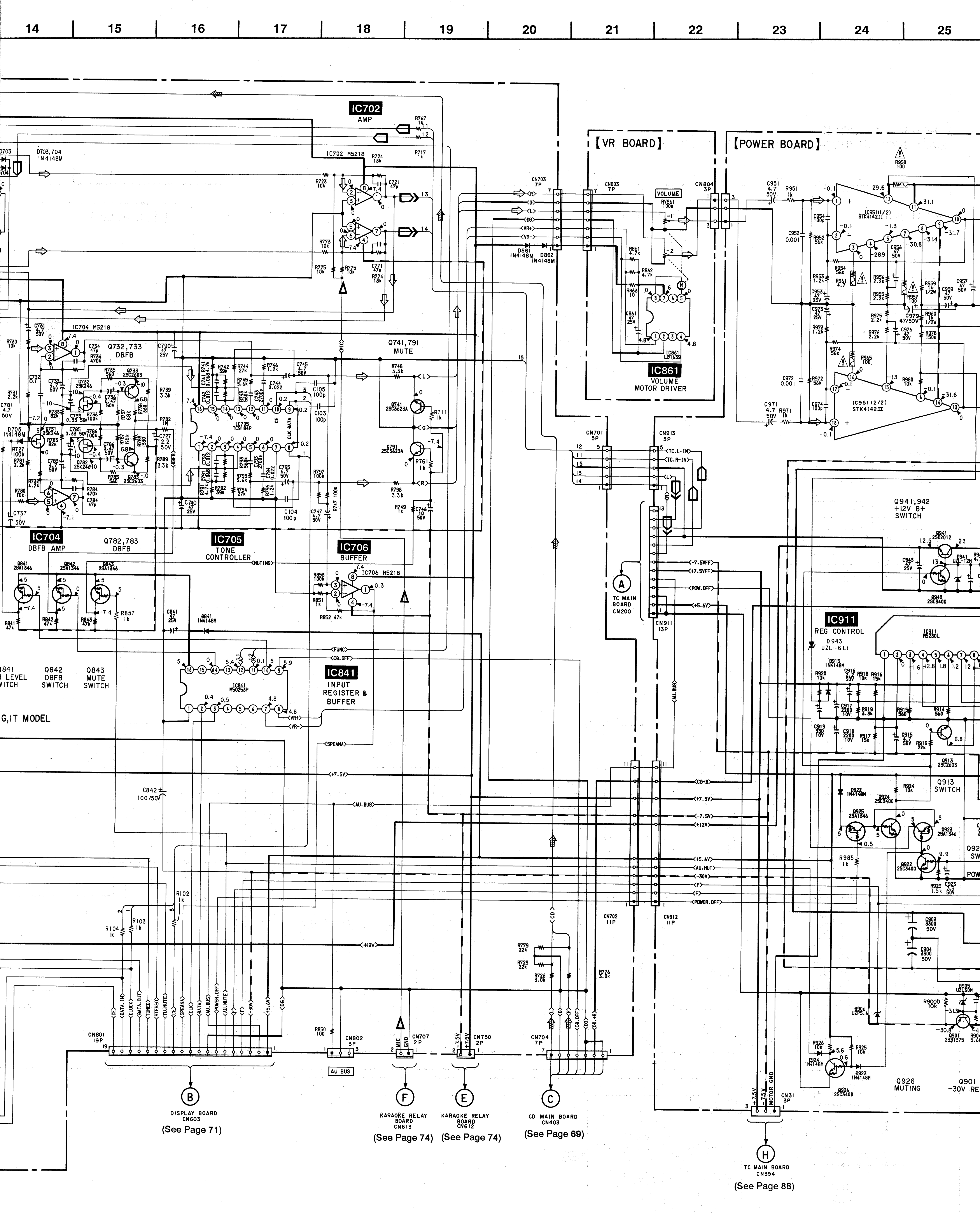

VSS
VDD
DATA
CLK
INPUT CONTROL CIRCUIT
128IT SHIFT REGISTER
LATCH CIRCUIT
BUFFER
Q0
Q1
Q2
Q3
Q4
Q11
Q10
Q9
Q8
Q7
Q6
Q5

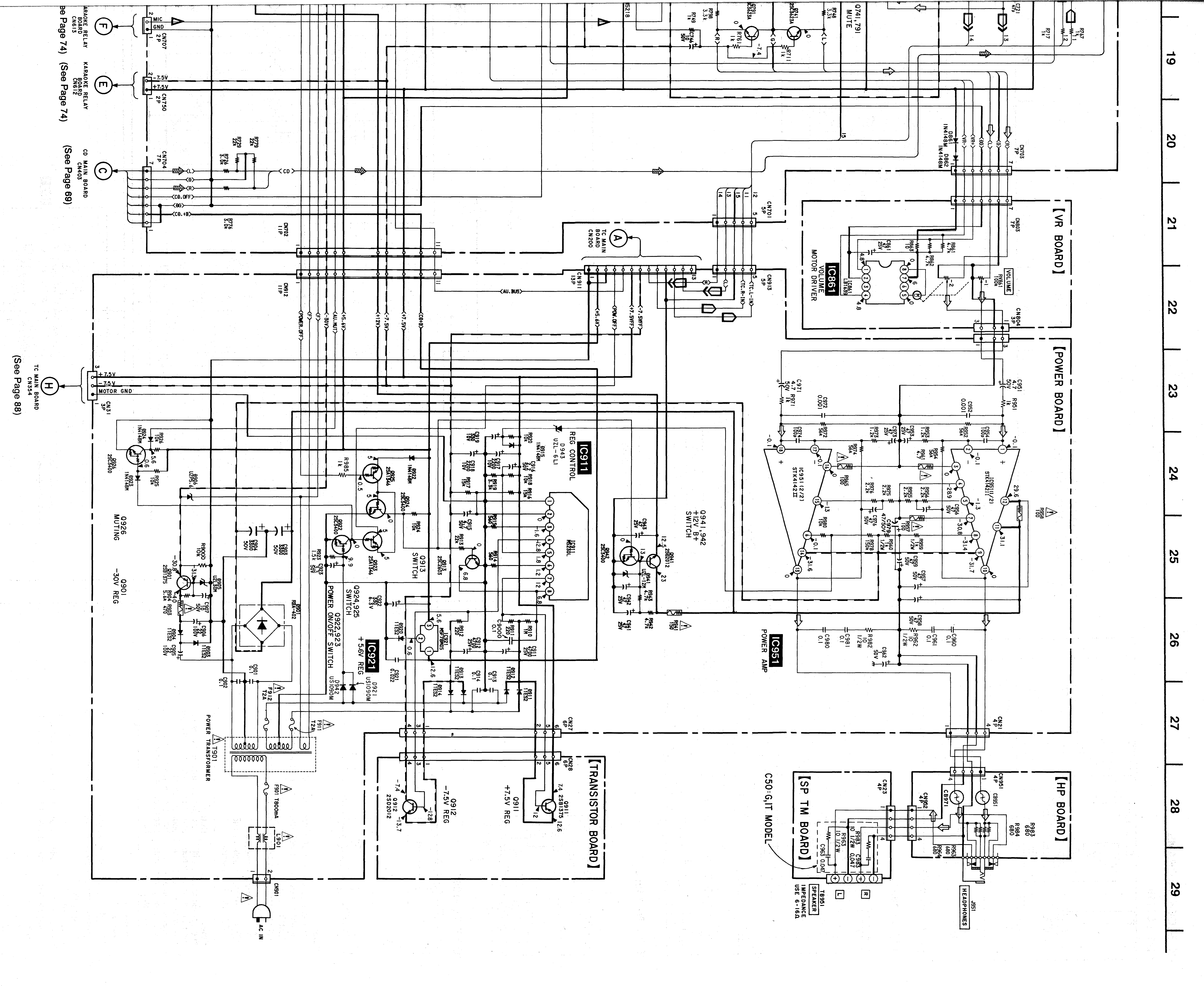
IC911 M5230L


START CIRCUIT
REFERENCE VOLTAGE CIRCUIT
OVERHEAT PROTECTION CIRCUIT
ERROR AMP
OVERCURRENT PROTECTION CIRCUIT
ERROR AMP
OVERCURRENT PROTECTION CIRCUIT
GND
BALANCE ADJ
OUT(−)
IN(−)
VOLTAGE ADJ
OUT(+)
IN(+)
OUT CONTROL


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
※ R7
C50: AEP,UK,EE MODEL 100
C50: G,IT MODEL 56
※ C76
C50: AEP,UK,EE MOD
C50: G,IT MODEL 10
Q1,2
FM IF AMP
C50:
AEP,UK,EE MODEL
Q3
B+ SWITCH
FE1 FM FRONT-END
ANT IN
GND
GND
VT
+B
IF OUT
F OUT
TB1
ANTENNA
FM75Ω COAXIAL
AM
FM TUNING LEVEL
IC51
FM/AM
MPX
C50:G,IT MODEL
LW FRONT-END
FE3
Q8
2SC3400
Q9
2SC2603
Q8,9
SWITCHING
C50:G,IT MODEL
MW FRONT-END
FE2
Q4,5
B+ SWITCH
Q7 2SC3400
Q6,7
SWITCHING
C50:
G, IT MODEL
C50:
AEP,UK,EE MODEL
Q21,22
LOW-PASS FILTER
Q23,24
LOW-PASS FILTER
IC21 LC7218
IC21
PLL
※ C7
C50: AEP,UK,EE MODEL 5.6p
C50: G,IT MODEL 8.2p
C50: AEP,UK,EE MODEL
L21 100μH
IFT51
IC51 LA1831
09

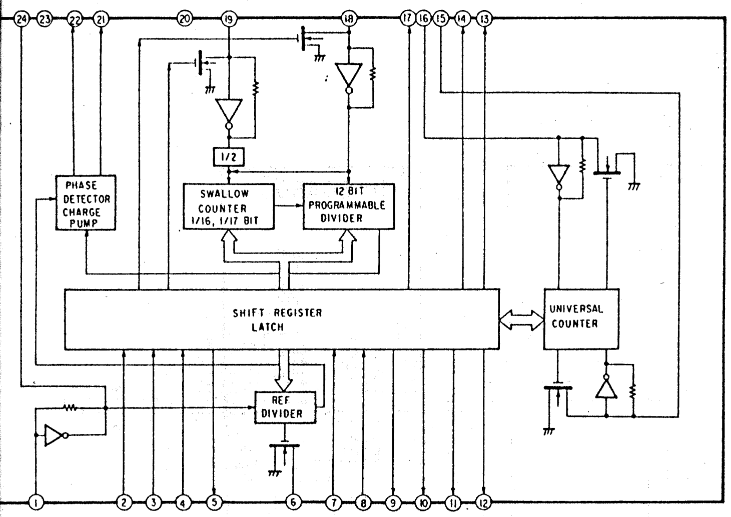

6
7
8
9
10
11
12
13
14
15
16
17
【MAIN BOARD】
IC701
FUNCTION SWITCH
IC701 MC14052
C50:G,IT MODEL
D703,704 1N4148M
IN
MD/PHONO
OUT
J701
J702
IC703
FUNCTION SWITCH
IC703 MC14066
Q701,702 SWITCH
Q701 2SA1346
Q702 2SC3400
【SW BOARD】
PHONO
MD
S701
INPUT SELECTOR
CN711 3P
CN751 3P
Q731 DBFB LEVEL
IC704 M5218
Q732,733 DBFB
IC802
FUNCTION SWITCH
IC802 MC14066
TUNER
IC704
DBFB AMP
Q782,783 DBFB
IC705
TONE CONTROLLER
IC705 TC9184P
START CIRCUIT
REFERENCE VOLTAGE CIRCUIT
OVERHEAT PROTECTION CIRCUIT
ERROR AMP
OVERCURRENT PROTECTION CIRCUIT
VOLTAGE ADJ
OUT(+)
IN(+)
OUT CONTROL
OUT1
IN2
※C76
C50:AEP,UK,EE MODEL 22/50V
C50:G,IT MODEL 10/50V
Q3 SWITCH
FM TUNING LEVEL
IC51
FM/AM MPX
IC51 LA1831
C50:AEP,UK,EE MODEL
C50:G,IT MODEL
Q51,52 AF AMP
LPF51
LPF52
IC801 M5218
IC801
EQ AMP
C50:G,IT MODEL
Q841 DBFB LEVEL SWITCH
Q842 DBFB SWITCH
Q843 MUTE SWITCH
IC841 M5253P
IFT51
Q53 MUTING
Q53 2SC3400
C50:AEP,UK,EE MODEL
※C7
C50:AEP,UK,EE MODEL 5.6p
C50:G,IT MODEL 8.2p
IC21
PLL
CN801 19P
CE
BATA.IN
CLOCK
BATA.OUT
TUNEB
STEREO
TU.MUTE
CE
SPEANA
CLK
BATA
AU.BUS
POWER.OFF
AU.MUTE
F
F
-30V
+5.6V
DG
B
DISPLAY BOARD CN603
(See Page 71)


14
15
16
17
18
19
20
21
22
23
24
25
IC702
AMP
IC702 M5218
【VR BOARD】
【POWER BOARD】
VOLUME
RV861 100k
IC951(1/2) STK4142II
IC951(2/2) STK4142II
IC704 M5218
Q732,733
DBFB
Q741,791
MUTE
IC861
VOLUME
MOTOR DRIVER
IC861 LB1639
IC705 TC9184P
IC704
DBFB AMP
Q782,783
DBFB
IC705
TONE
CONTROLLER
IC706
BUFFER
IC706 M5218
Q941,942
+12V B+
SWITCH
IC911
REG CONTROL
D943
UZL-6LI
IC911 M5230L
Q841
LEVEL
SWITCH
Q842
DBFB
SWITCH
Q843
MUTE
SWITCH
IC841
INPUT
REGISTER &
BUFFER
IC841 M5025BP
G,IT MODEL
Q913
SWITCH
Q926
MUTING
Q901
-30V RE
CN703 7P
CN803 7P
CN804 3P
CN701 5P
CN913 5P
CN911 13P
CN702 11P
CN912 11P
CN801 19P
CN802 3P
CN707 2P
CN750 2P
CN704 7P
CN31 3P
AU BUS
A
TC MAIN BOARD CN200
B
DISPLAY BOARD CN603
(See Page 71)
F
KARAOKE RELAY BOARD CN613
(See Page 74)
E
KARAOKE RELAY BOARD CN612
(See Page 74)
C
CD MAIN BOARD CN403
(See Page 69)
H
TC MAIN BOARD CN354
(See Page 88)

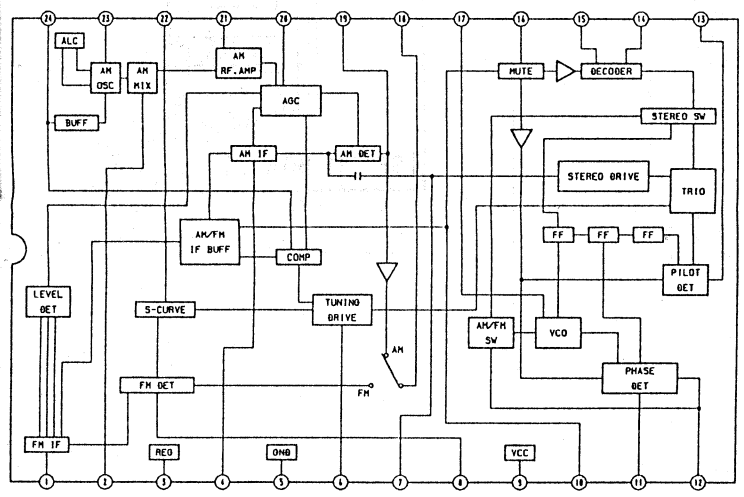

19
20
21
22
23
24
25
26
27
28
29
【VR BOARD】
【POWER BOARD】
【HP BOARD】
【SP TM BOARD】
【TRANSISTOR BOARD】
IC861 VOLUME MOTOR DRIVER
IC911 REG CONTROL
IC921 +5.6V REG
IC951 POWER AMP
Q741,791 MUTE
Q941,942 +12V B+ SWITCH
Q913 SWITCH
Q924,925 SWITCH
Q922,923 POWER ON/OFF SWITCH
Q926 MUTING
Q901 -30V REG
Q911 +7.5V REG
Q912 -7.5V REG
T901 POWER TRANSFORMER
AC IN
C50:G,IT MODEL
TB951 SPEAKER IMPEDANCE USE 6-16Ω
J951 HEADPHONES
KARAOKE RELAY BOARD CN613 (See Page 74)
KARAOKE RELAY BOARD CN612 (See Page 74)
CD MAIN BOARD CN403 (See Page 69)
TC MAIN BOARD CN354 (See Page 88)
TC MAIN BOARD CN200
MIC
GND
MOTOR GND
(AU.BUS)
(POWER.OFF)
(AU.MUT)
(+5.6V)
(-30V)
(+12V)
(-7.5V)
(+7.5V)
(CD+B)
(CD.OFF)
(POW.OFF)
(+7.5VFF)
(-7.5VFF)

C BLOCK DIAGRAMS

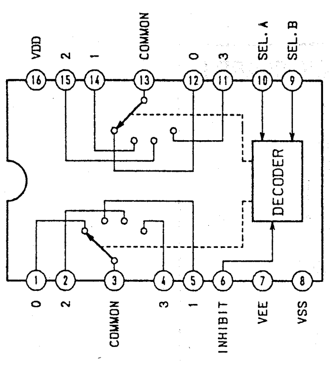
C21 LC7218


PHASE DETECTOR CHARGE PUMP
1/2
SWALLOW COUNTER 1/16, 1/17 BIT
12 BIT PROGRAMMABLE DIVIDER
SHIFT REGISTER LATCH
UNIVERSAL COUNTER
REF DIVIDER

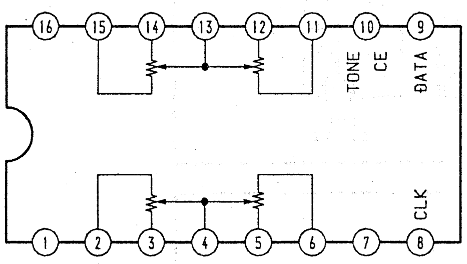
IC51 LA1831


ALC
AM OSC
AM MIX
AM RF.AMP
AGC
MUTE
DECODER
BUFF
STEREO SW
AM IF
AM DET
STEREO DRIVE
TRIO
AM/FM IF BUFF
COMP
FF
FF
FF
PILOT DET
LEVEL DET
S-CURVE
TUNING DRIVE
AM/FM SW
VCO
AM
FM
PHASE DET
FM DET
FM IF
REG
GND
VCC

IC701 MC14052


VDD
2
1
COMMON
0
3
SEL.A
SEL.B
DECODER
0
2
COMMON
3
1
INHIBIT
VEE
VSS

IC705 TC9184P


TONE
CE
DATA
CLK

Note:

- All capacitors are in µF unless otherwise noted. pF:µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.

Note:	Note:
The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

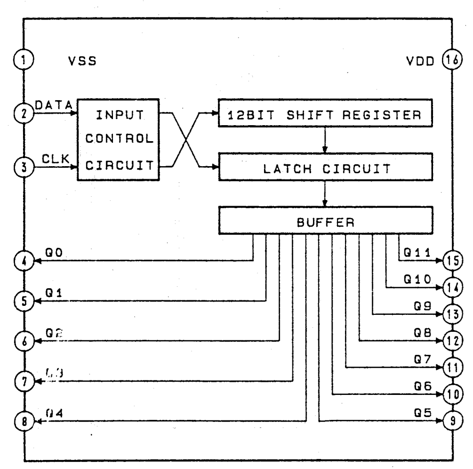
- ▬ : B+ Line
- ╍ : B– Line
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : FM
- Voltages are taken with a VOM (Input impedance 10Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ⇨ : CD
  ▷ : PB
  ▷ : REC
  ▷ : MIC

- CND : Canadian model
- EA : Saudi Arabia model
- AUS : Australian model
- SP : Singapore model

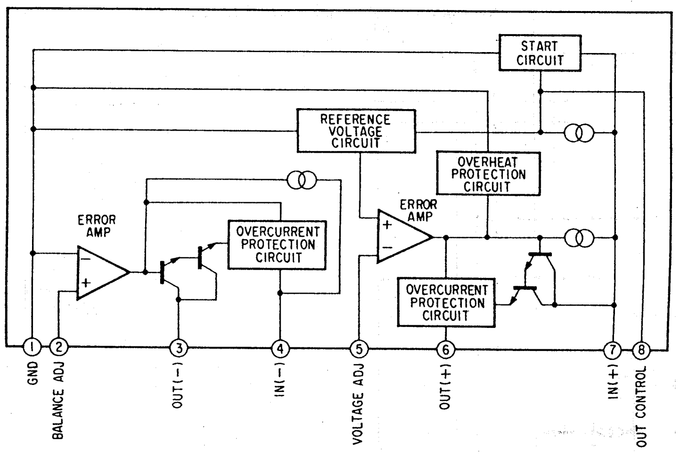
7-8. SCHEMATIC DIAGRAM

• MAIN SECTION (HCD-C50 : CND, E, EA, AUS, SP, PX/C50U)

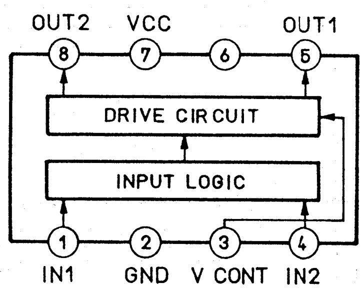
IC841 M50253P

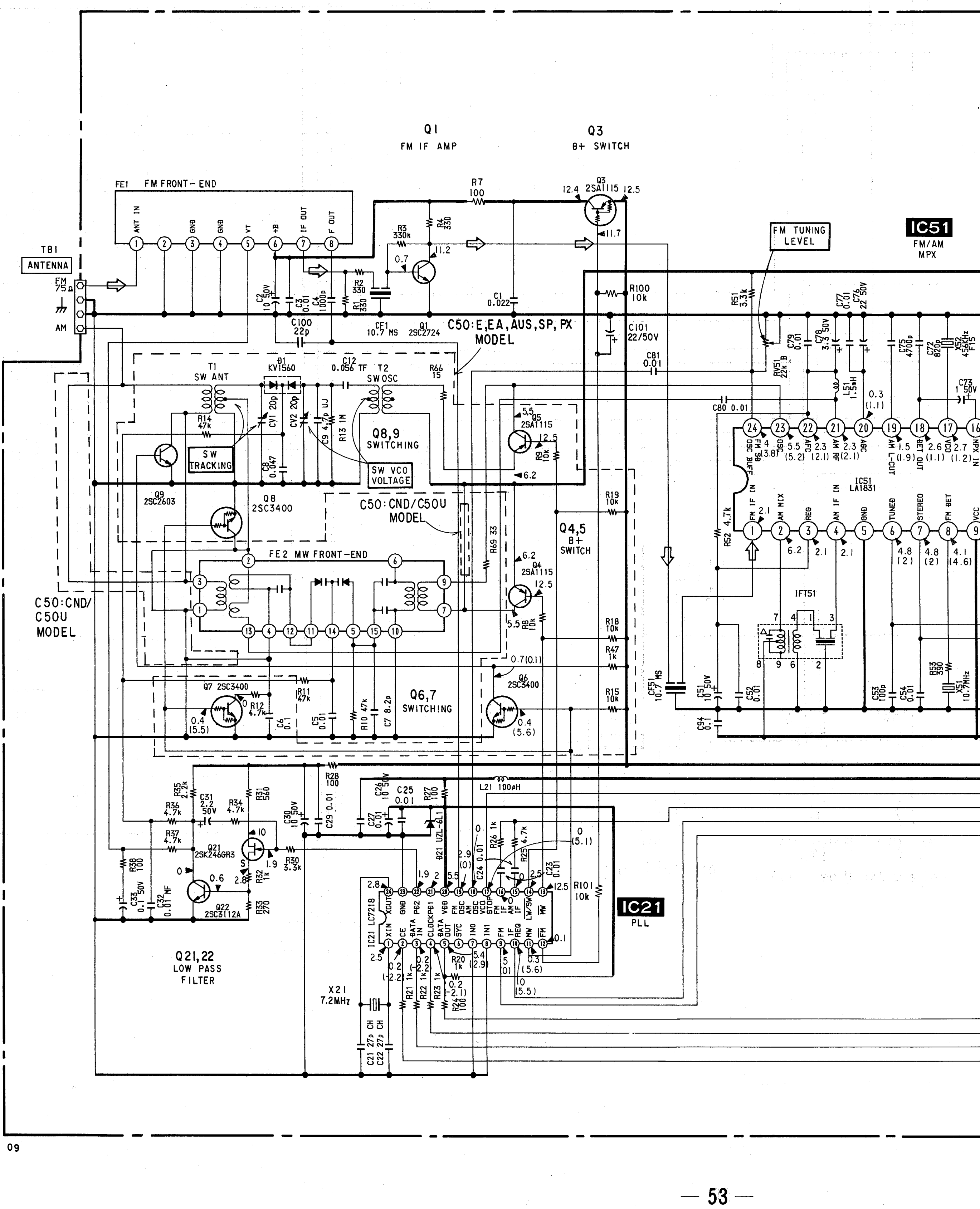

VSS
VDD
DATA
CLK
INPUT CONTROL CIRCUIT
12BIT SHIFT REGISTER
LATCH CIRCUIT
BUFFER
Q0
Q1
Q2
Q3
Q4
Q11
Q10
Q9
Q8
Q7
Q6
Q5

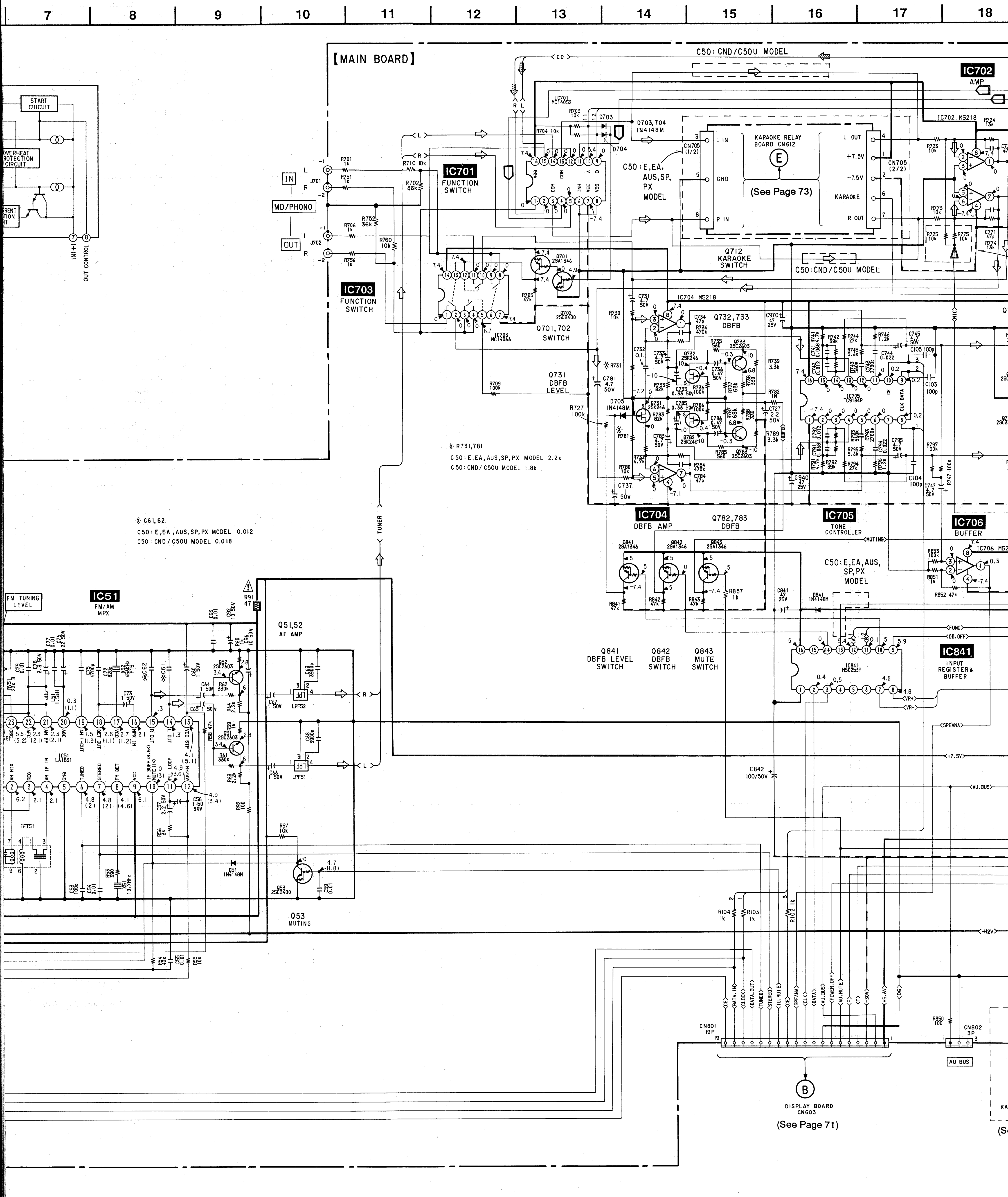
IC911 M5230L


START CIRCUIT
REFERENCE VOLTAGE CIRCUIT
OVERHEAT PROTECTION CIRCUIT
ERROR AMP
ERROR AMP
OVERCURRENT PROTECTION CIRCUIT
OVERCURRENT PROTECTION CIRCUIT
GND
BALANCE ADJ
OUT(–)
IN(–)
VOLTAGE ADJ
OUT(+)
IN(+)
OUT CONTROL

IC861 LB1639


OUT2
VCC
OUT1
DRIVE CIRCUIT
INPUT LOGIC
IN1
GND
V CONT
IN2


Q1
FM IF AMP
Q3
B+ SWITCH
FE1 FM FRONT-END
ANT IN
GND
GND
VT
+B
IF OUT
F OUT
TB1
ANTENNA
FM 75Ω
AM
C50:E,EA,AUS,SP,PX MODEL
T1 SW ANT
T2 SW OSC
SW TRACKING
Q8,9 SWITCHING
SW VCO VOLTAGE
Q9 2SC2603
Q8 2SC3400
C50:CND/C50U MODEL
FE2 MW FRONT-END
Q4,5 B+ SWITCH
C50:CND/ C50U MODEL
Q7 2SC3400
Q6,7 SWITCHING
Q6 2SC3400
Q21,22 LOW PASS FILTER
X21 7.2MHz
IC21 LC7218
IC21 PLL
FM TUNING LEVEL
IC51 FM/AM MPX
IC51 LA1831
IFT51
L21 100µH
09



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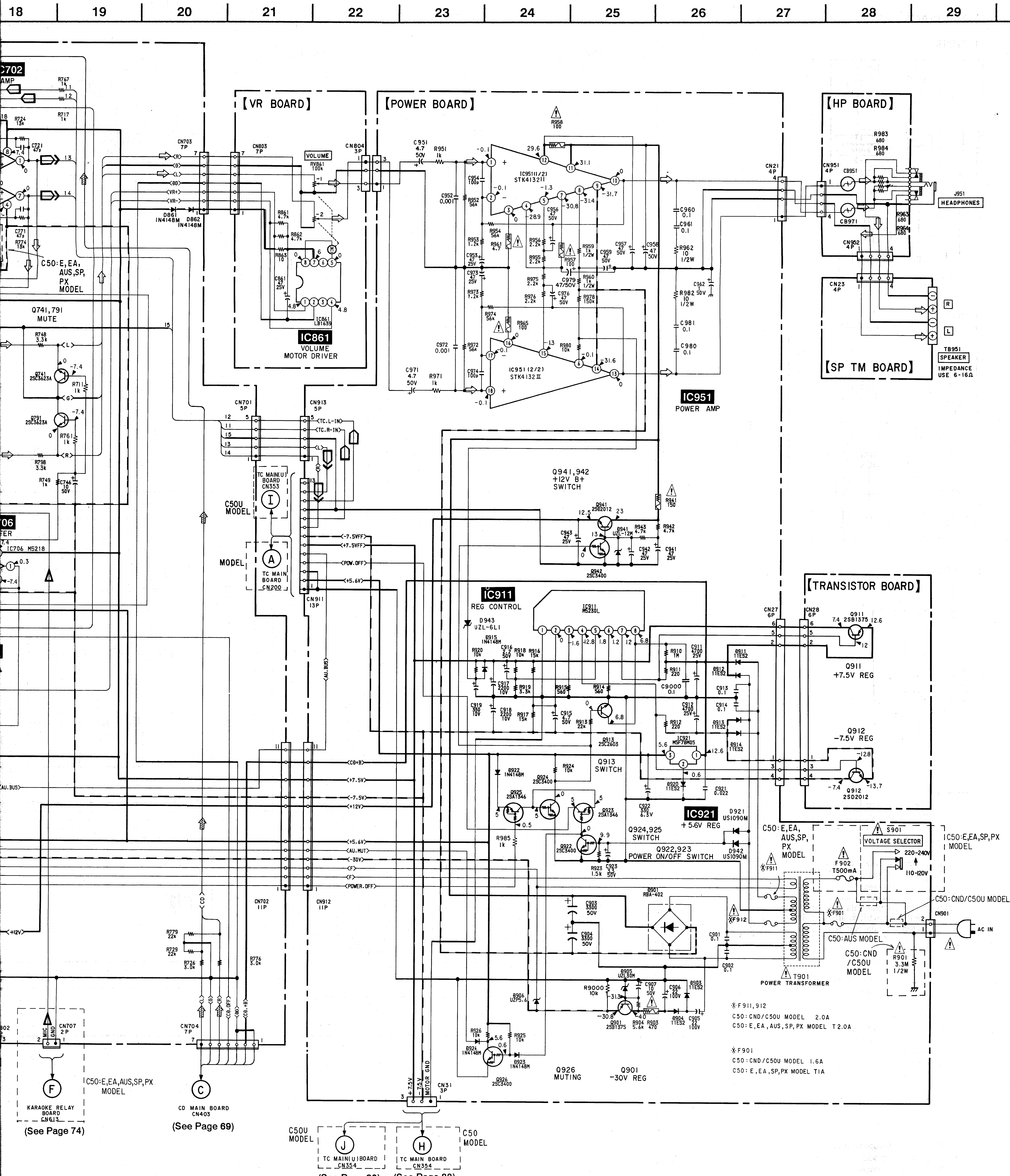
18
【MAIN BOARD】
START CIRCUIT
OVERHEAT PROTECTION CIRCUIT
IN(+)
OUT CONTROL
IN
MD/PHONO
OUT
J701
J702
IC701 FUNCTION SWITCH
IC701 MC14052
IC703 FUNCTION SWITCH
IC703 MC14066
Q701,702 SWITCH
Q731 DBFB LEVEL
D703,704 1N4148M
C50:E,EA, AUS,SP, PX MODEL
KARAOKE RELAY BOARD CN612
E
(See Page 73)
CN705 (1/2)
CN705 (2/2)
L IN
GND
R IN
L OUT
+7.5V
-7.5V
KARAOKE
R OUT
Q712 KARAOKE SWITCH
C50:CND/C50U MODEL
IC702 AMP
IC702 M5218
<CD>
TUNER
※R731,781
C50:E,EA,AUS,SP,PX MODEL 2.2k
C50:CND/C50U MODEL 1.8k
Q732,733 DBFB
IC704 M5218
IC704 DBFB AMP
Q782,783 DBFB
IC705 TONE CONTROLLER
IC705 TC9184P
IC706 BUFFER
IC706 M5218
C50:E,EA,AUS, SP,PX MODEL
Q841 DBFB LEVEL SWITCH
Q842 DBFB SWITCH
Q843 MUTE SWITCH
IC841 INPUT REGISTER & BUFFER
IC841 M50253P
※C61,62
C50:E,EA,AUS,SP,PX MODEL 0.012
C50:CND/C50U MODEL 0.018
FM TUNING LEVEL
IC51 FM/AM MPX
IC51 LA1831
Q51,52 AF AMP
Q53 MUTING
LPF51
LPF52
<MUTING>
<FUNC>
<CB.OFF>
<VR+>
<VR->
<SPEANA>
<+7.5V>
<AU.BUS>
<+12V>
<MIC>
<CE>
<BATA.IN>
<CLOCK>
<BATA.OUT>
<TUNEB>
<STEREO>
<TU.MUTE>
<SPEANA>
<CLK>
<BATA>
<POWER.OFF>
<AU.MUTE>
<F>
<-30V>
<+5.6V>
<DG>
CN801 19P
CN802 3P
AU BUS
B
DISPLAY BOARD CN603
(See Page 71)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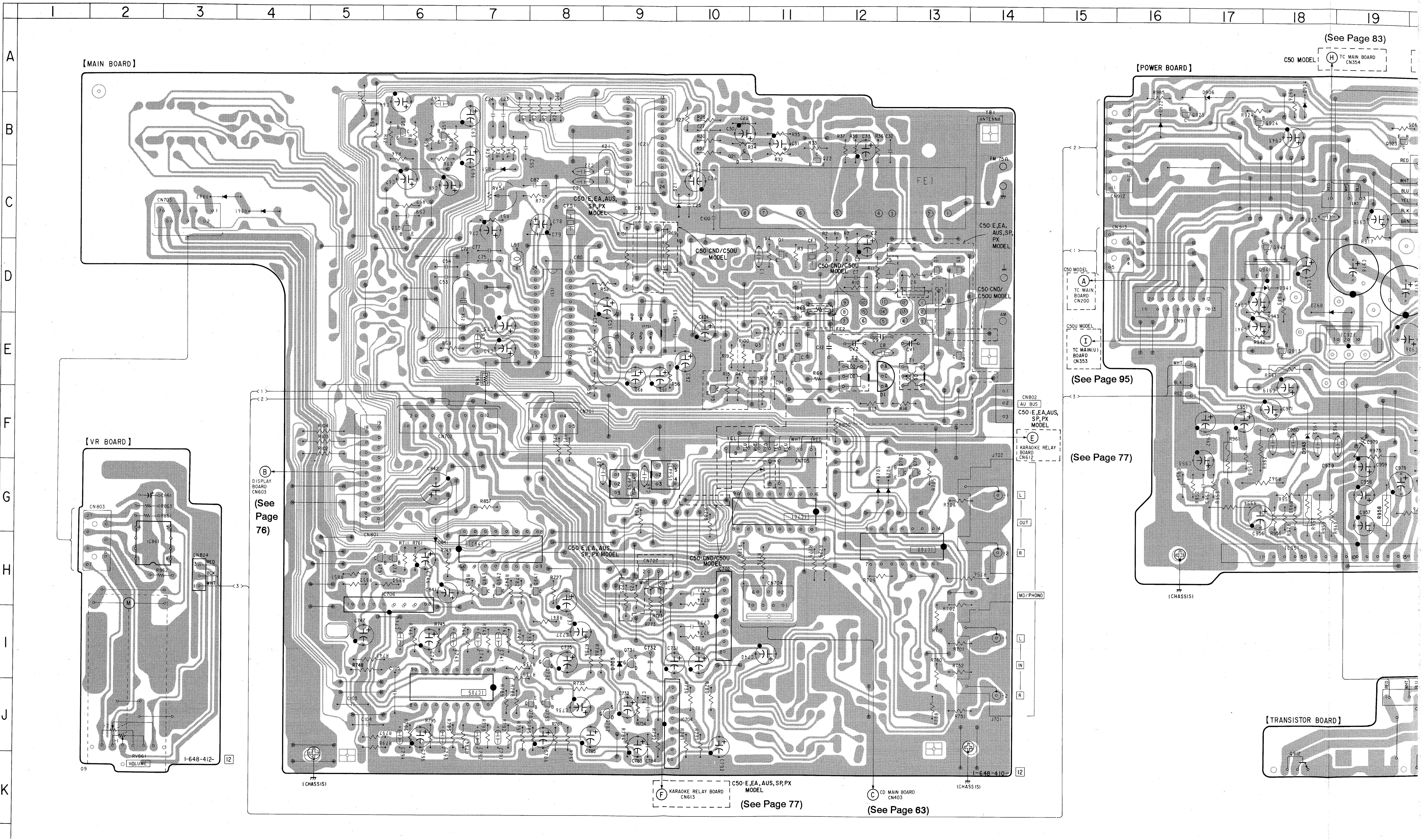
29
【VR BOARD】
【POWER BOARD】
【HP BOARD】
【SP TM BOARD】
【TRANSISTOR BOARD】
IC861
VOLUME MOTOR DRIVER
IC861 LB1639
VOLUME RV861 100k
IC951 POWER AMP
IC951(1/2) STK4132II
IC951(2/2) STK4132II
IC911 REG CONTROL
IC911 M5230L
IC921 +5.6V REG
IC921 MSF78M05
Q741,791 MUTE
Q941,942 +12V B+ SWITCH
Q913 SWITCH
Q924,925 SWITCH
Q922,923 POWER ON/OFF SWITCH
Q911 +7.5V REG
Q912 -7.5V REG
Q926 MUTING
Q901 -30V REG
T901 POWER TRANSFORMER
D901 RBA-402
S901 VOLTAGE SELECTOR
220-240V
110-120V
F902 T500mA
J951 HEADPHONES
TB951 SPEAKER IMPEDANCE USE 6-16Ω
AC IN
CN901
C50:E,EA,AUS,SP,PX MODEL
C50:CND/C50U MODEL
C50:AUS MODEL
C50:CND /C50U MODEL
R901 3.3M 1/2W
※F911,912
C50:CND/C50U MODEL 2.0A
C50:E,EA,AUS,SP,PX MODEL T2.0A
※F901
C50:CND/C50U MODEL 1.6A
C50:E,EA,SP,PX MODEL T1A
F KARAOKE RELAY BOARD CN613 (See Page 74)
C CD MAIN BOARD CN403 (See Page 69)
J TC MAIN(U)BOARD CN354 (See Page 90)
H TC MAIN BOARD CN354 (See Page 88)
C50U MODEL
C50 MODEL
I TC MAIN(U) BOARD CN353
A TC MAIN BOARD CN200
CN701 5P
CN702 11P
CN703 7P
CN704 7P
CN707 2P
CN803 7P
CN804 3P
CN911 13P
CN912 11P
CN913 5P
CN21 4P
CN23 4P
CN27 6P
CN28 6P
CN31 3P
CN951 4P
CN952 4P
+7.5V
-7.5V
MOTOR GND
MIC
GND
<POWER.OFF>
<AU.MUT>
<AU.BUS>
<+5.6V>
<-30V>
<+12V>
<CD+B>
<POW.OFF>
<+7.5VFF>
<-7.5VFF>
<TC.L-IN>
<TC.R-IN>

7-9. PRINTED WIRING BOARD

• MAIN SECTION (HCD-C50 : CND, E, EA, AUS, SP, PX/C50U)

• See page 32 for Circuit Boards Location and see page 97, 98 for Semiconductor Lead Layouts.



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A
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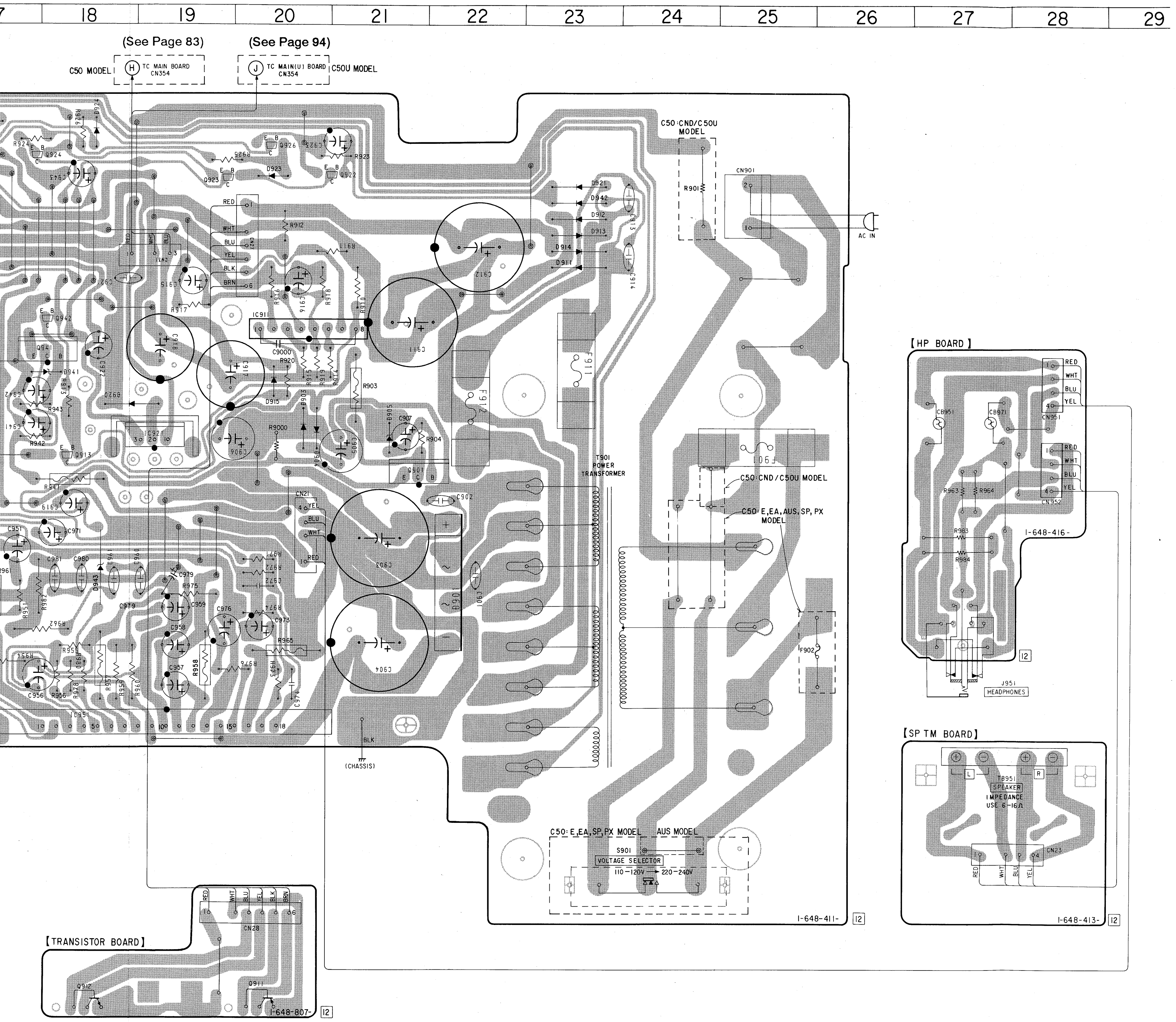
C
D
E
F
G
H
I
J
K
[MAIN BOARD]
[POWER BOARD]
[VR BOARD]
[TRANSISTOR BOARD]
(See Page 83)
C50 MODEL
H TC MAIN BOARD CN354
TB1 ANTENNA
FM 75Ω
AM
FE1
C50:E,EA,AUS, SP,PX MODEL
C50:CND/C50U MODEL
C50 MODEL
A TC MAIN BOARD CN200
C50U MODEL
I TC MAIN(U) BOARD CN353
(See Page 95)
CN802 AU BUS
C50:E,EA,AUS, SP,PX MODEL
E KARAOKE RELAY BOARD CN612
(See Page 77)
B DISPLAY BOARD CN603
(See Page 76)
J702
L
OUT
R
MD/PHONO
L
IN
R
J701
CN801
CN702
CN701
CN705
CN707
CN704
CN703
CN803
CN804
RED
BLK
WHT
RV861 VOLUME
1-648-412-
12
1-648-410-
12
(CHASSIS)
(CHASSIS)
(CHASSIS)
F KARAOKE RELAY BOARD CN613
C50:E,EA,AUS,SP,PX MODEL
(See Page 77)
C CD MAIN BOARD CN403
(See Page 63)
CN912
CN913
CN911
RED
WHT
BLU
YEL
BLK
BRN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(See Page 83)
(See Page 94)
C50 MODEL
H TC MAIN BOARD CN354
J TC MAIN(U) BOARD CN354
C50U MODEL
C50 CND/C50U MODEL
CN901
AC IN
R901
IC911
IC921
T901 POWER TRANSFORMER
F911
F912
F901
F902
C50 CND/C50U MODEL
C50 E,EA,AUS,SP,PX MODEL
[HP BOARD]
CN951
CN952
J951 HEADPHONES
1-648-416-
[SP TM BOARD]
TB951 SPEAKER IMPEDANCE USE 6-16Ω
CN23
1-648-413-
C50: E,EA,SP,PX MODEL
AUS MODEL
S901 VOLTAGE SELECTOR
110-120V
220-240V
1-648-411-
(CHASSIS)
[TRANSISTOR BOARD]
CN28
Q912
Q911
1-648-807-
12

- **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D1	F-13	Q1	D-11
D21	C-10	Q3	E-11
D51	C-7	Q4	E-11
D703	G-13	Q5	E-11
D704	G-13	Q6	F-10
D705	J-9	Q7	D-13
D841	H-6	Q8	D-13
D861	C-4	Q9	E-13
D862	C-3	Q21	B-11
D901	G-22	Q22	C-12
D903	E-20	Q51	B-6
D904	E-21	Q52	B-6
D905	E-21	Q53	D-6
D906	B-18	Q701	G-13
D911	C-23	Q702	G-13
D912	C-23	Q731	J-9
D913	C-23	Q732	J-8
D914	C-23	Q733	J-8
D915	D-20	Q741	H-6
D920	E-19	Q782	K-9
D921	B-23	Q783	K-8
D922	B-16	Q791	H-6
D923	B-20	Q841	I-8
D924	A-18	Q842	I-7
D941	D-18	Q843	I-7
D942	B-23	Q901	F-23
D943	G-18	Q911	K-20
		Q912	K-18
IC21	B-9	Q913	E-18
IC51	D-8	Q921	E-19
IC701	G-11	Q922	B-20
IC702	I-11	Q923	B-20
IC703	H-12	Q924	B-17
IC704	K-10	Q925	B-18
IC705	J-7	Q926	B-20
IC706	I-6	Q941	D-18
IC841	H-7	Q942	D-18
IC861	H-2		
IC911	D-21		
IC921	E-19		
IC951	H-19		

Note:

- o—— : parts extracted from the components side.
- [ ]+ indicates side identified with part number.
- Δ : internal component.
- :::::: : Pattern on the side which is seen.

- CND : Canadian model
- EA : Saudi Arabia model
- AUS : Australian model
- SP : Singapore model

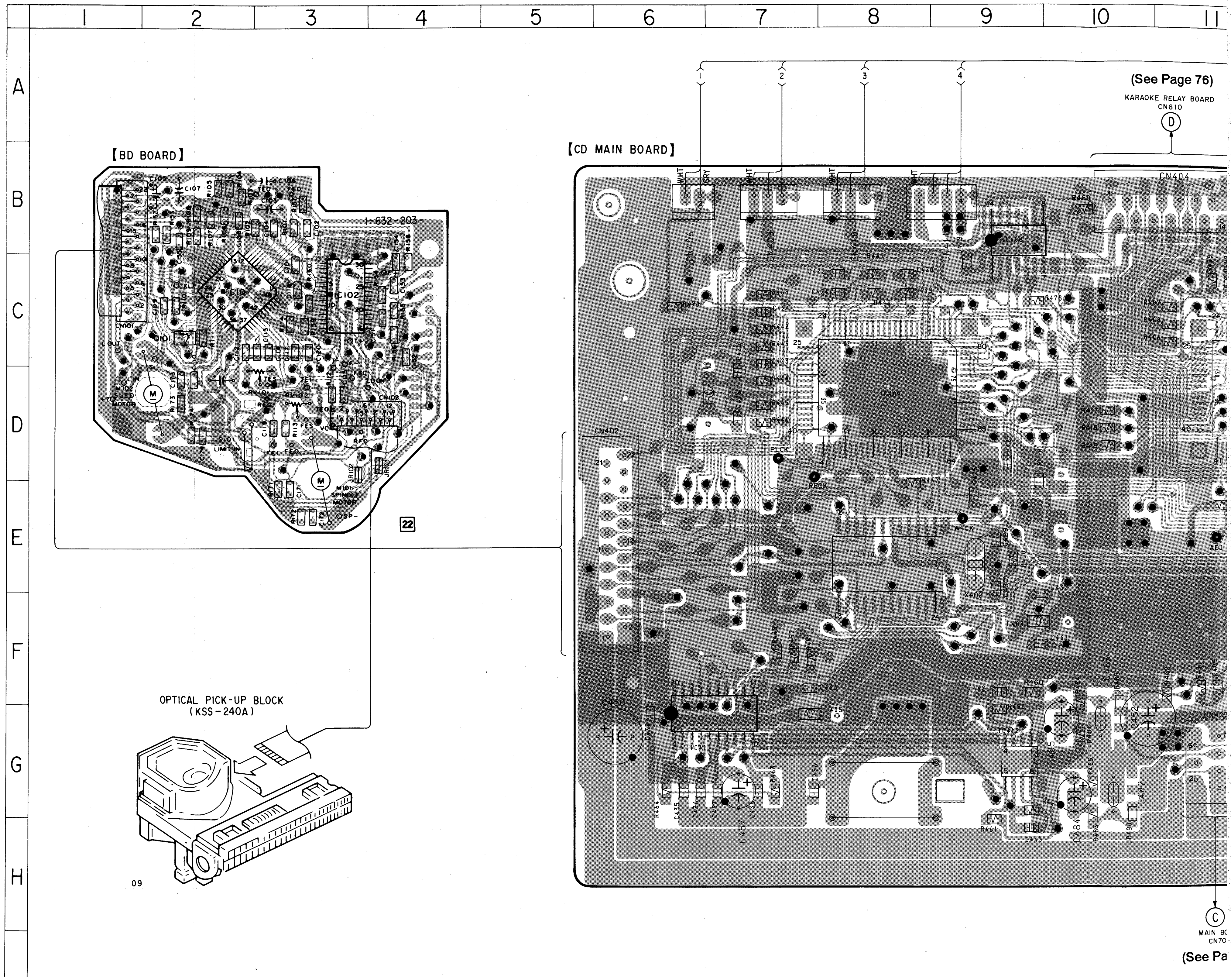
7-10. PRINTED WIRING BOARD

• CD SECTION

• See page 32 for Circuit Boards Location and see page 97, 98 for Semiconductor Lead Layouts.

• Semiconductor Location

Ref. No.	Location
D406	F-13
D407	E-15
D408	E-15
D410	G-14
IC101	C-2
IC102	C-3
IC401	E-20
IC402	G-15
IC403	E-12
IC404	E-13
IC408	B-9
IC409	C-8
IC410	E-8
IC411	F-6
IC412	G-9
IC414	D-14
IC415	C-14
IC416	C-14
IC450	C-11
IC601	D-19
Q101	C-2
Q401	G-14
Q402	G-14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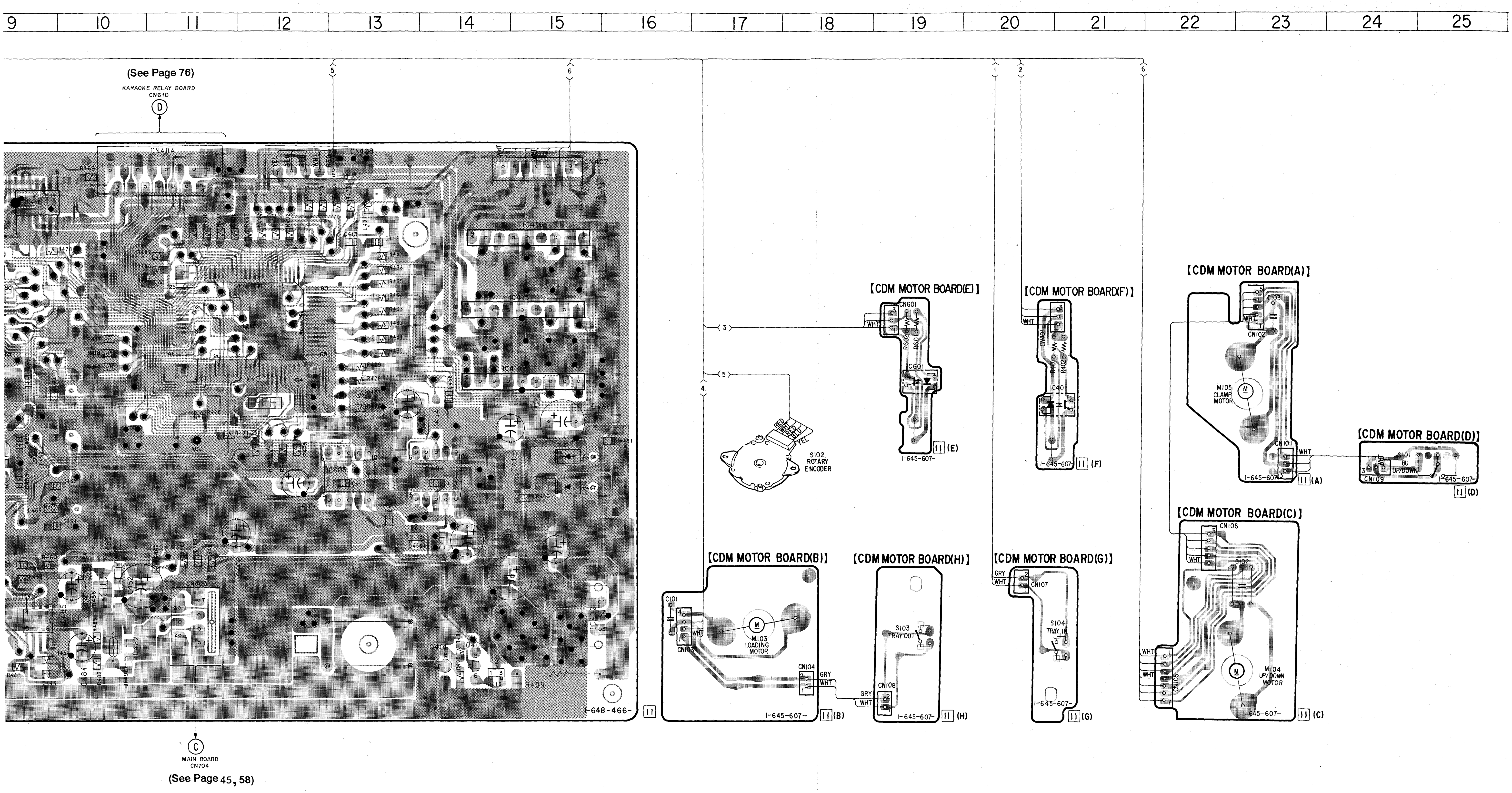
11
A
B
C
D
E
F
G
H
【BD BOARD】
1-632-203-
22
IC101
IC102
Q101
CN101
M102 SLED MOTOR
M101 SPINDLE MOTOR
S101 LIMIT IN
RV101
RV102
OPTICAL PICK-UP BLOCK
(KSS-240A)
09
【CD MAIN BOARD】
(See Page 76)
KARAOKE RELAY BOARD
CN610
D
WHT
GRY
CN404
CN406
CN409
CN410
CN411
CN402
IC408
IC409
IC410
IC411
PLCK
RFCK
WFCK
X402
ADJ
C450
C452
C457
C
MAIN BO
CN70
(See Pa

Note:
- ○—— : parts extracted from the components side.
- ● : Through hole.
- ▒ : Pattern on the side which is seen.
- ░ : Pattern of the rear side.


9
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17
18
19
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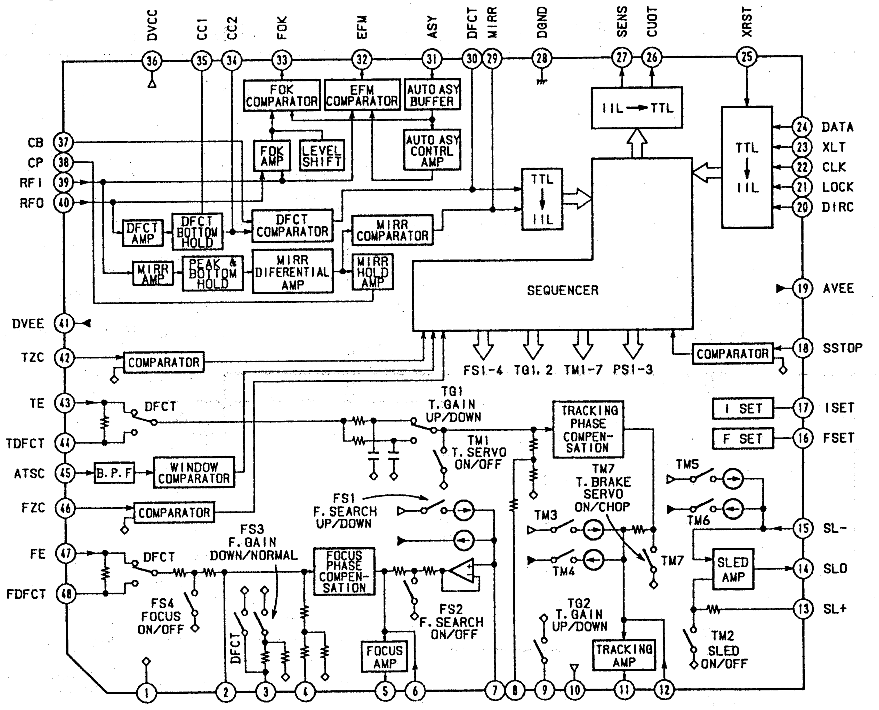
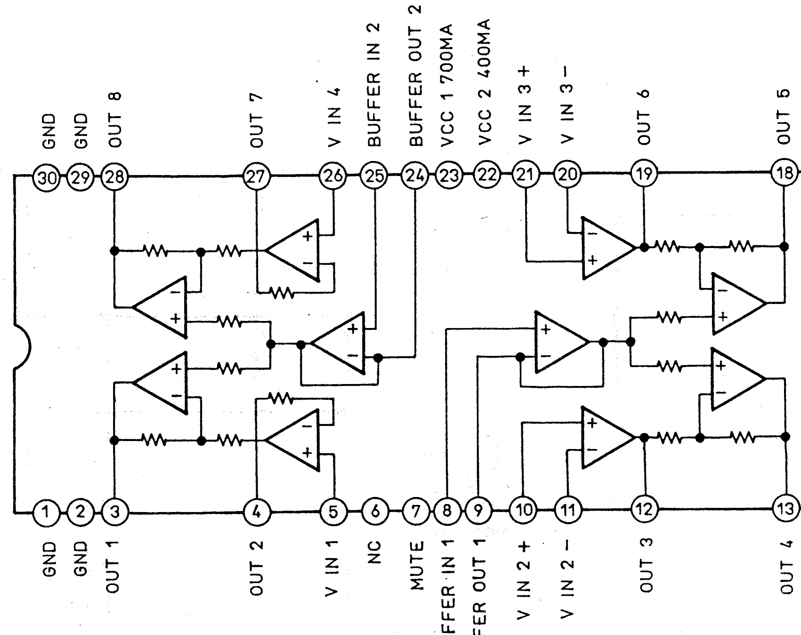
21
22
23
24
25
(See Page 76)
KARAOKE RELAY BOARD
CN610
D
CN404
CN408
CN407
IC416
IC415
IC414
IC458
IC403
IC404
CN403
X401
ADJ
Q401
Q402
R409
1-648-466-
11
C
MAIN BOARD
CN704
(See Page 45, 58)
[CDM MOTOR BOARD(E)]
CN601
IC601
1-645-607-
11 (E)
S102
ROTARY
ENCODER
[CDM MOTOR BOARD(F)]
CN401
IC401
1-645-607-
11 (F)
[CDM MOTOR BOARD(A)]
CN102
C103
M105
CLAMP
MOTOR
CN101
1-645-607-
11 (A)
[CDM MOTOR BOARD(D)]
S101
BU
UP/DOWN
CN109
1-645-607-
11 (D)
[CDM MOTOR BOARD(C)]
CN106
C102
CN105
M104
UP/DOWN
MOTOR
1-645-607-
11 (C)
[CDM MOTOR BOARD(B)]
C101
CN103
M103
LOADING
MOTOR
CN104
1-645-607-
11 (B)
[CDM MOTOR BOARD(H)]
CN108
S103
TRAY OUT
1-645-607-
11 (H)
[CDM MOTOR BOARD(G)]
CN107
S104
TRAY IN
1-645-607-
11 (G)
WHT
GRY
RED
YEL

• IC BLOCK DIAGRAMS

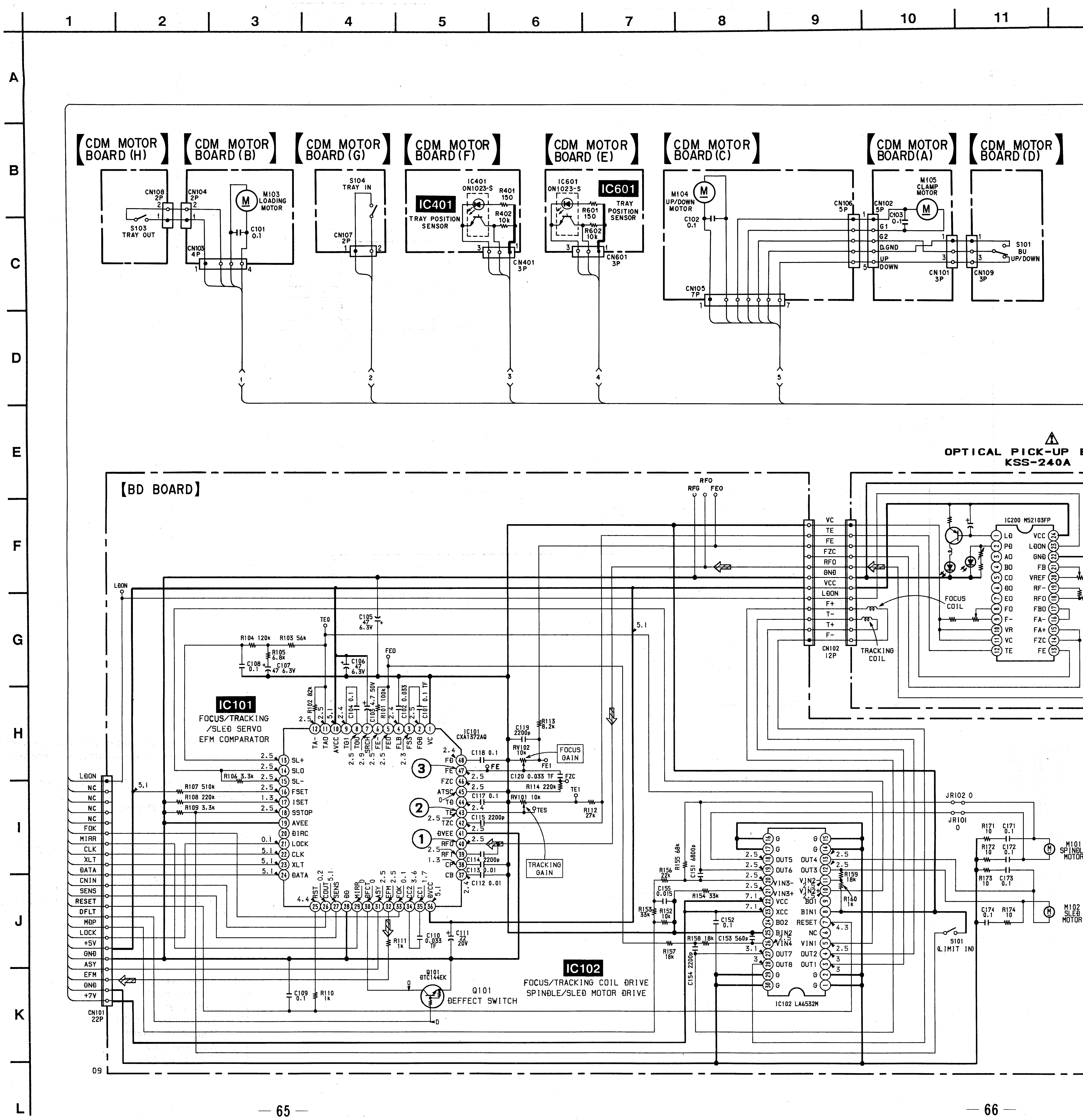
IC101 CXA1372Q


DVCC
CC1
CC2
FOK
EFM
ASY
DFCT
MIRR
DGND
SENS
CUOT
XRST
FOK COMPARATOR
EFM COMPARATOR
AUTO ASY BUFFER
FOK AMP
LEVEL SHIFT
AUTO ASY CONTRL AMP
IIL→TTL
TTL ↓ IIL
DATA
XLT
CLK
LOCK
DIRC
CB
CP
RFI
RFO
DFCT AMP
DFCT BOTTOM HOLD
DFCT COMPARATOR
MIRR COMPARATOR
MIRR AMP
PEAK & BOTTOM HOLD
MIRR DIFERENTIAL AMP
MIRR HOLD AMP
SEQUENCER
AVEE
DVEE
TZC
COMPARATOR
SSTOP
FS1-4 TG1, 2 TM1-7 PS1-3
TE
DFCT
TG1 T. GAIN UP/DOWN
TM1 T. SERVO ON/OFF
TRACKING PHASE COMPEN-SATION
I SET
ISET
TDFCT
F SET
FSET
ATSC
B.P.F
WINDOW COMPARATOR
TM5
FZC
FS1 F. SEARCH UP/DOWN
TM3
TM7 T. BRAKE SERVO ON/CHOP
TM6
SL-
FE
FS3 F. GAIN DOWN/NORMAL
TM4
SLED AMP
SLO
FDFCT
FS4 FOCUS ON/OFF
FOCUS PHASE COMPEN-SATION
FS2 F. SEARCH ON/OFF
TG2 T. GAIN UP/DOWN
TM2 SLED ON/OFF
SL+
FOCUS AMP
TRACKING AMP
VC
FGD
FS3
FLB
FEO
FE-
SRCH
TGU
TG2
AVCC
TAO
TA-

IC102 LA6532M


GND
GND
OUT 8
OUT 7
V IN 4
BUFFER IN 2
BUFFER OUT 2
VCC 1 700MA
VCC 2 400MA
V IN 3 +
V IN 3 −
OUT 6
OUT 5
GND
GND
OUT 1
OUT 2
V IN 1
NC
MUTE
BUFFER IN 1
BUFFER OUT 1
V IN 2 +
V IN 2 −
OUT 3
OUT 4

7-11. SCHEMATIC DIAGRAM
• CD SECTION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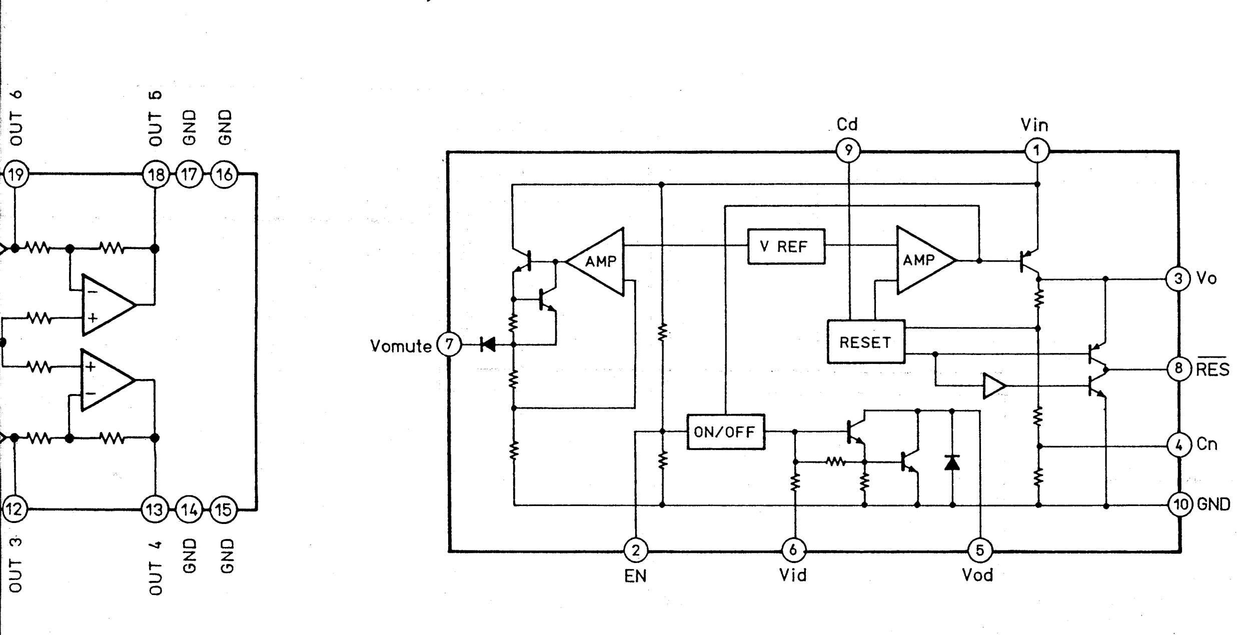
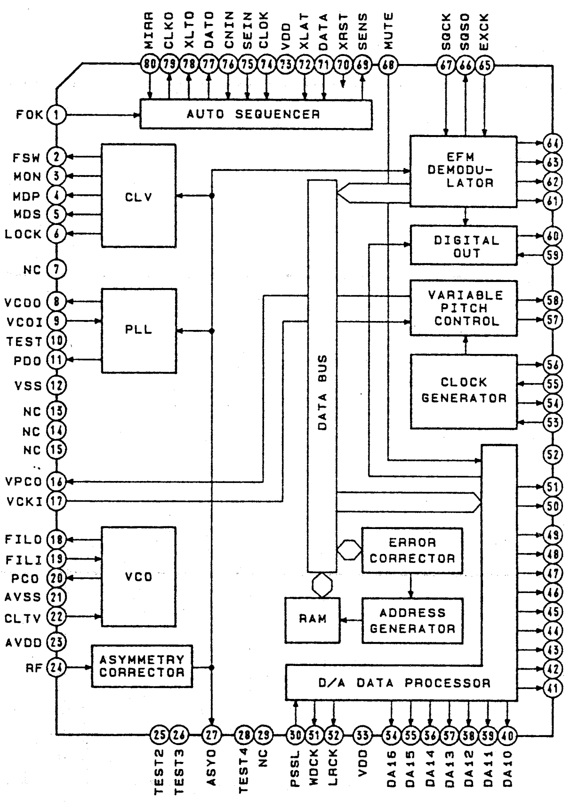
11
A
B
C
D
E
F
G
H
I
J
K
L
CDM MOTOR BOARD (H)
CN108 2P
S103 TRAY OUT
CDM MOTOR BOARD (B)
CN104 2P
M103 LOADING MOTOR
C101 0.1
CN103 4P
CDM MOTOR BOARD (G)
S104 TRAY IN
CN107 2P
CDM MOTOR BOARD (F)
IC401 ON1023-S
R401 150
R402 10k
IC401
TRAY POSITION SENSOR
CN401 3P
CDM MOTOR BOARD (E)
IC601 ON1023-S
IC601
TRAY POSITION SENSOR
R601 150
R602 10k
CN601 3P
CDM MOTOR BOARD (C)
M104 UP/DOWN MOTOR
C102 0.1
CN106 5P
CN105 7P
CDM MOTOR BOARD (A)
CN102 5P
M105 CLAMP MOTOR
C103 0.1
G1
G2
DGND
UP
DOWN
CN101 3P
CDM MOTOR BOARD (D)
S101 BU UP/DOWN
CN109 3P
OPTICAL PICK-UP
KSS-240A
[BD BOARD]
RFO
RFG
FEO
IC200 M52103FP
VC
TE
FE
FZC
RFO
GND
VCC
LDON
F+
T-
T+
F-
CN102 12P
FOCUS COIL
TRACKING COIL
LD
PD
AO
BO
CO
DO
EO
FO
F-
VR
VC
TE
VCC
LDON
GND
FB
VREF
RF-
RFO
FBO
FA-
FA+
FZC
FE
LDON
TEO
FEO
R104 120k
R103 56k
R105 6.8k
C108 0.1
C107 47 6.3V
C105 47 6.3V
C106 47 6.3V
IC101
FOCUS/TRACKING /SLED SERVO EFM COMPARATOR
IC101 CXA1372AQ
R102 82k
C104 0.1
C103 4.7 50V
R101 100k
C102 0.033
C101 0.1 TF
C119 2200p
R113 8.2k
RV102 10k
FOCUS GAIN
C118 0.1
C120 0.033 TF
R114 220k
C117 0.1
RV101 10k
TES
TE1
FE1
R112 27k
C115 2200p
C114 2200p
C113 0.01
C112 0.01
TRACKING GAIN
R106 3.3k
R107 510k
R108 220k
R109 3.3k
C110 0.033 TF
C111 22 20V
R111 1k
C109 0.1
R110 1k
Q101 DTC144EK
Q101 DEFFECT SWITCH
IC102
FOCUS/TRACKING COIL DRIVE SPINDLE/SLED MOTOR DRIVE
IC102 LA6532M
R155 68k
C151 6800p
R156 22k
C155 0.015
R154 33k
R153 33k
R152 10k
C152 0.1
R157 18k
R158 18k
C153 560p
C154 2200p
R159 18k
R160 1k
S101 LIMIT IN
JR102 0
JR101 0
R171 10
C171 0.1
R172 10
C172 0.1
R173 10
C173 0.1
C174 0.1
R174 10
M101 SPINDLE MOTOR
M102 SLED MOTOR
CN101 22P
LDON
NC
NC
NC
NC
FOK
MIRR
CLK
XLT
DATA
CNIN
SENS
RESET
DFLT
MDP
LOCK
+5V
GND
ASY
EFM
GND
+7V
5.1
09

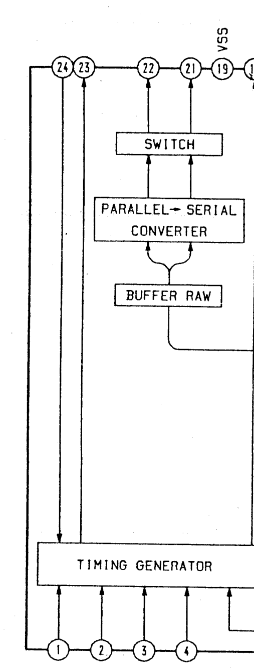
IC403, 404 LA5601

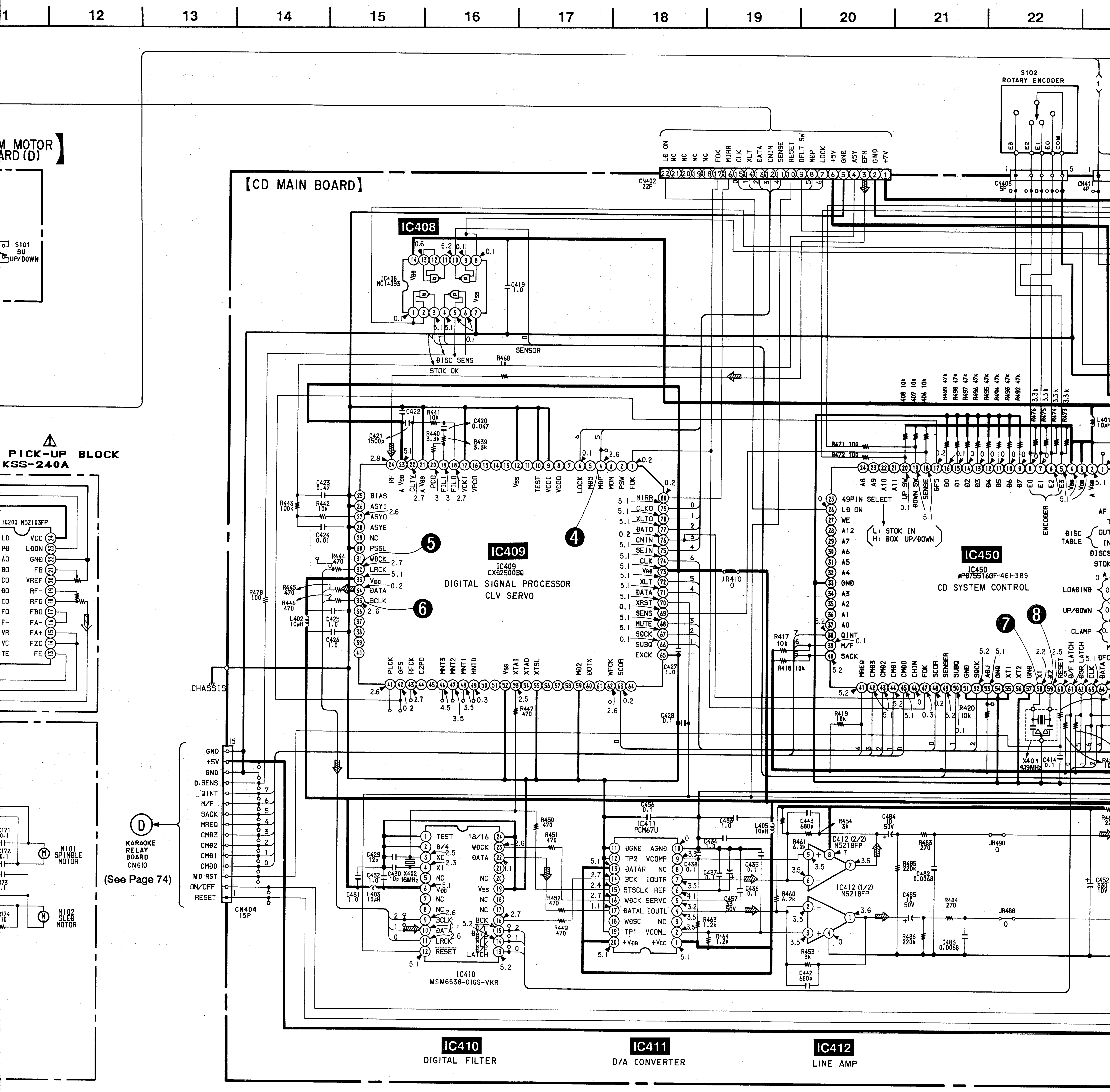

OUT 6
OUT 5
GND
OUT 3
OUT 4
Cd
Vin
V REF
AMP
RESET
ON/OFF
Vomute
Vo
RES
Cn
GND
EN
Vid
Vod

IC409 CXD2500BQ


AUTO SEQUENCER
CLV
PLL
VCO
ASYMMETRY CORRECTOR
DATA BUS
EFM DEMODULATOR
DIGITAL OUT
VARIABLE PITCH CONTROL
CLOCK GENERATOR
ERROR CORRECTOR
RAM
ADDRESS GENERATOR
D/A DATA PROCESSOR
FOK
FSW
MON
MDP
MDS
LOCK
VCOO
VCOI
TEST
PDO
VSS
VPCO
VCKI
FILO
FILI
PCO
AVSS
CLTV
AVDD
RF
MIRR
CLKO
XLTO
DATO
CNIN
SEIN
CLOK
VDD
XLAT
DATA
XRST
SENS
MUTE
SQCK
SQSO
EXCK
SBSO
SCOR
WFCK
EMPH
DOUT
MD2
C16M
C4M
FSTT
XTSL
XTAO
XTAI
VSS
APTL
APTR
DA01
DA02
DA03
DA04
DA05
DA06
DA07
DA08
DA09
TEST2
TEST3
ASYO
TEST4
NC
PSSL
WDCK
LRCK
VDD
DA16
DA15
DA14
DA13
DA12
DA11
DA10

IC410 MSM6538-01


VSS
SWITCH
PARALLEL- SERIAL CONVERTER
BUFFER RAW
TIMING GENERATOR

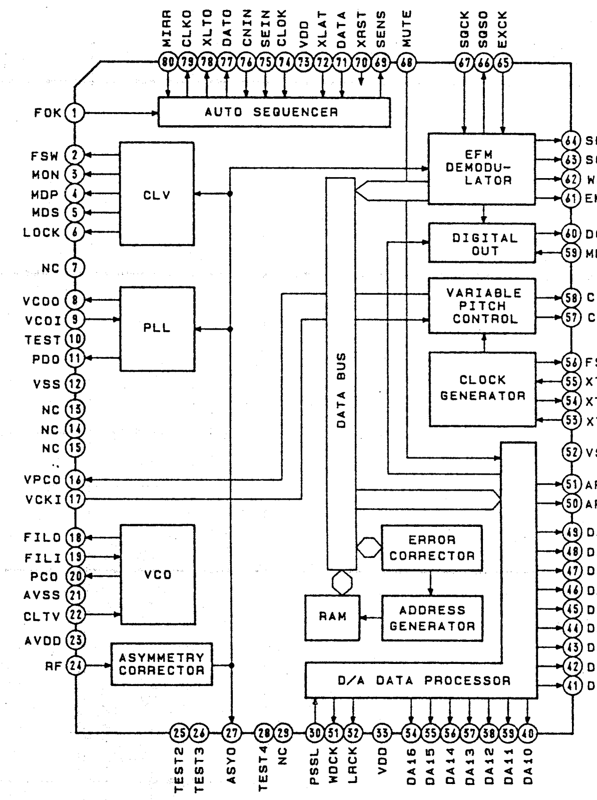

11
12
13
14
15
16
17
18
19
20
21
22
M MOTOR
ARD (D)
S101
BU
UP/DOWN
PICK-UP BLOCK
KSS-240A
IC200 M52103FP
M101 SPINDLE MOTOR
M102 SLED MOTOR
CHASSIS
D
KARAOKE RELAY BOARD CN610
(See Page 74)
CN404 15P
GND
+5V
GND
D.SENS
QINT
M/F
SACK
MREQ
CMD3
CMD2
CMD1
CMD0
MD RST
ON/OFF
RESET
【CD MAIN BOARD】
CN402 22P
LD ON
FOK
MIRR
CLK
XLT
DATA
CNIN
SENSE
RESET
DFLT SW
MDP
LOCK
+5V
GND
ASY
EFM
GND
+7V
S102
ROTARY ENCODER
CN408 5P
CN411 4P
IC408
IC408 MC14093
SENSOR
DISC SENS
STOK OK
R468
IC409
IC409 CX02500BQ
DIGITAL SIGNAL PROCESSOR
CLV SERVO
IC450
IC450 μPD75516GF-461-3B9
CD SYSTEM CONTROL
49PIN SELECT
L: STOK IN
H: BOX UP/DOWN
ENCODER
DISC TABLE
LOADING
UP/DOWN
CLAMP
IC410 MSM6538-01GS-VKR1
IC411 PCM67U
IC412 (1/2) M5218FP
IC412 (2/2) M5218FP
X401 4.19MHz
X402 16MHz
JR410
JR488
JR490
4
5
6
7
8

IC410
DIGITAL FILTER

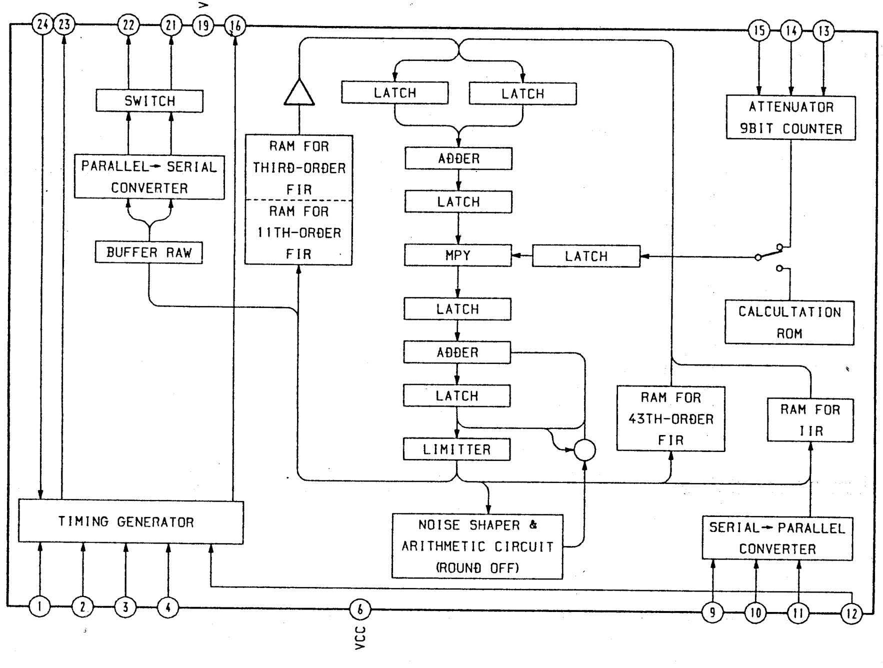
IC411
D/A CONVERTER

IC412
LINE AMP

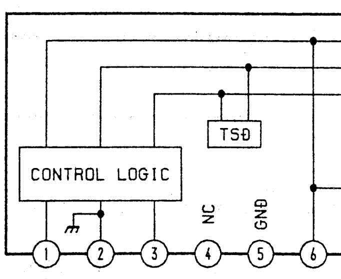
IC409 CXD2500BQ

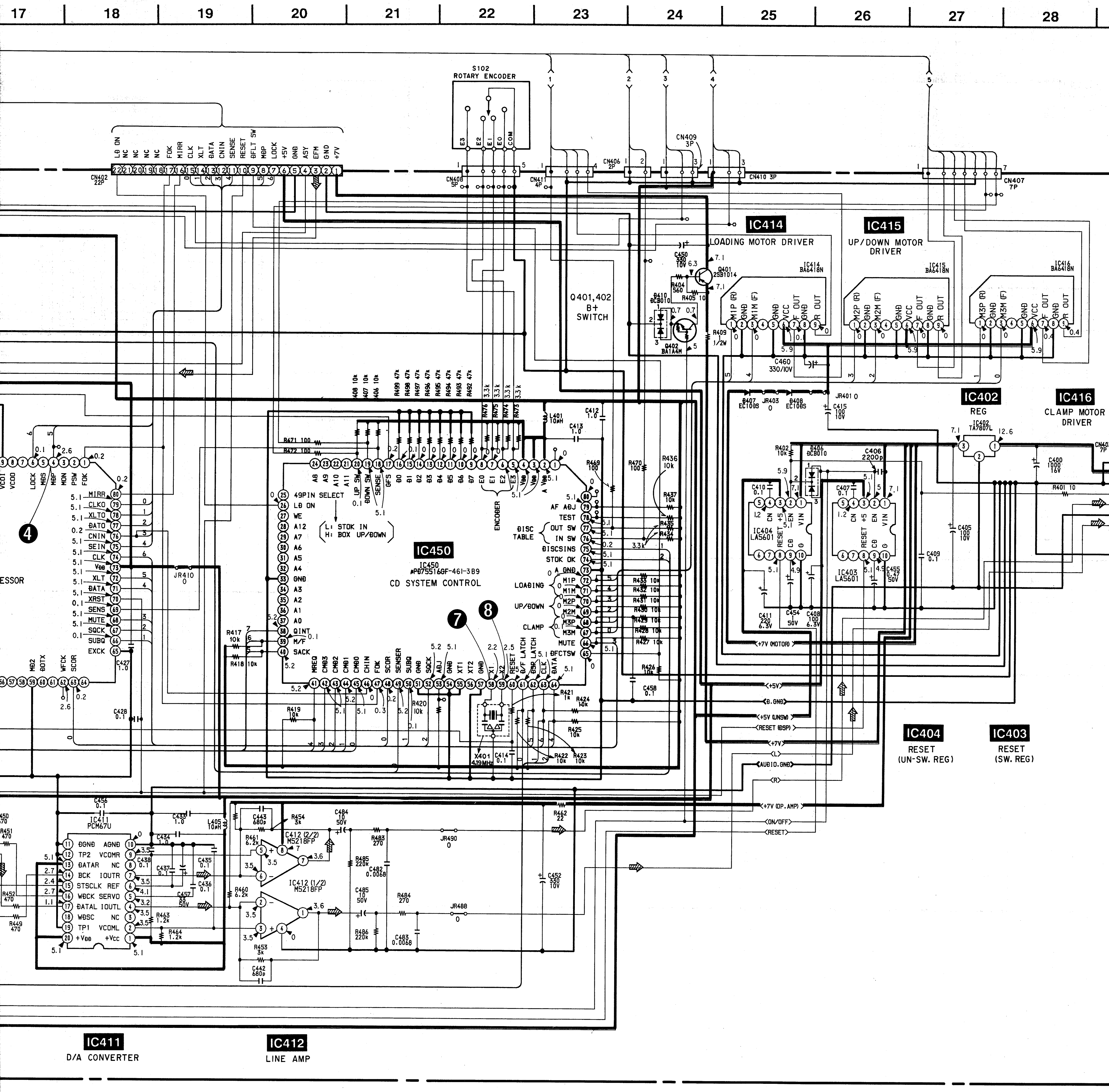

AUTO SEQUENCER
CLV
PLL
VCO
ASYMMETRY CORRECTOR
DATA BUS
EFM DEMODULATOR
DIGITAL OUT
VARIABLE PITCH CONTROL
CLOCK GENERATOR
ERROR CORRECTOR
RAM
ADDRESS GENERATOR
D/A DATA PROCESSOR
FOK
FSW
MON
MDP
MDS
LOCK
NC
VCOO
VCOI
TEST
PDO
VSS
VPCO
VCKI
FILO
FILI
PCO
AVSS
CLTV
AVDD
RF
MIRR
CLKO
XLTO
DATO
CNIN
SEIN
CLOK
VDD
XLAT
DATA
XRST
SENS
MUTE
SQCK
SQSO
EXCK
SBSO
SCOR
WFCK
EMPH
DOUT
MD2
C16M
C4M
FSTT
XTSL
XTAO
XTAI
APTL
APTR
DA01
DA02
DA03
DA04
DA05
DA06
DA07
DA08
DA09
TEST2
TEST3
ASYO
TEST4
PSSL
WDCK
LRCK
DA16
DA15
DA14
DA13
DA12
DA11
DA10

IC410 MSM6538-01GS-VKR1

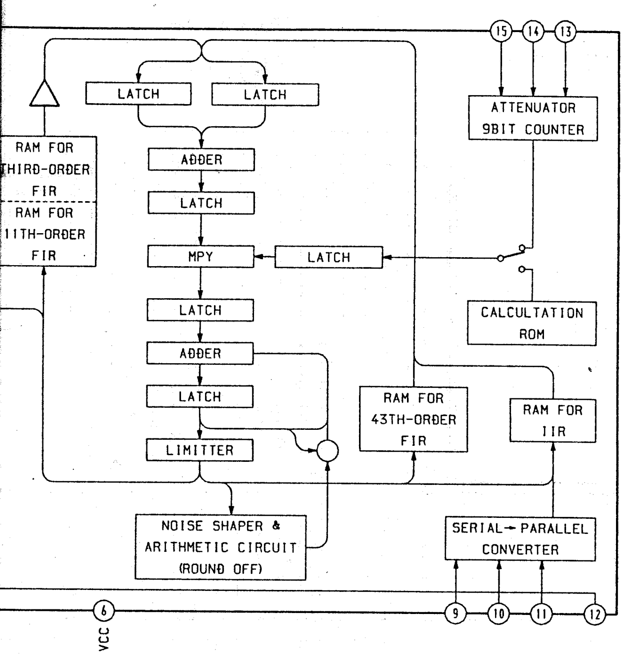

VSS
VCC
SWITCH
PARALLEL-SERIAL CONVERTER
BUFFER RAW
RAM FOR THIRD-ORDER FIR
RAM FOR 11TH-ORDER FIR
LATCH
ADDER
MPY
LIMITTER
NOISE SHAPER & ARITHMETIC CIRCUIT (ROUND OFF)
TIMING GENERATOR
ATTENUATOR 9BIT COUNTER
CALCULTATION ROM
RAM FOR 43TH-ORDER FIR
RAM FOR IIR
SERIAL-PARALLEL CONVERTER

IC414, 415, 416 BA6418N

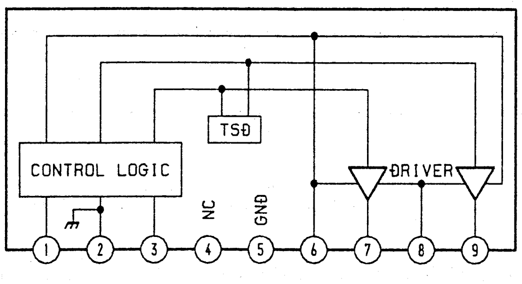

CONTROL LOGIC
TSD
NC
GND


17
18
19
20
21
22
23
24
25
26
27
28
Vo
RES
Cn
GND
ESSOR
S102 ROTARY ENCODER
E3
E2
E1
E0
COM
CN402 22P
L0 ON
NC
FOK
MIRR
CLK
XLT
DATA
CNIN
SENSE
RESET
ΘFLT SW
MDP
LOCK
+5V
GND
ASY
EFM
+7V
CN408 5P
CN411 4P
CN406 2P
CN409 3P
CN410 3P
CN407 7P
IC414
LOADING MOTOR DRIVER
IC415
UP/DOWN MOTOR DRIVER
IC416
CLAMP MOTOR DRIVER
M1P (R)
M1M (F)
M2P (R)
M2M (F)
M3P (R)
M3M (F)
VCC
F OUT
R OUT
Q401,402 B+ SWITCH
Q401 2SB1014
Q402 BA1A4M
IC402 REG TA7807L
IC404 LA5601
IC403 LA5601
RESET
CN
EN
CD
VIN
IC450
IC450 μPD75516GF-461-3B9
CD SYSTEM CONTROL
49PIN SELECT
L: STOK IN
H: BOX UP/DOWN
ENCODER
DISC TABLE
OUT SW
IN SW
DISCSINS
STOK OK
AF ADJ
TEST
LOADING
UP/DOWN
CLAMP
MUTE
DFCTSW
MREQ
CMD3
CMD2
CMD1
CMD0
CHIN
SCOR
SENSER
SUBQ
SQCK
ADJ
XT1
XT2
X1
X2
D/F LATCH
DSP LATCH
X401 4.19MHz
IC411 PCM67U
DGND
AGND
TP2
VCOMR
DATAR
BCK
IOUTR
STSCLK
REF
WDCK
SERVO
DATAL
IOUTL
WDSC
TP1
VCOML
IC412 (2/2) M5218FP
IC412 (1/2) M5218FP
+5V
D.GND
+5V (UNSW)
RESET (DSP)
+7V
L
AUDIO.GND
R
+7V (OP.AMP)
ON/OFF
RESET
+7V (MOTOR)
IC404
RESET (UN-SW. REG)
IC403
RESET (SW. REG)
IC411
D/A CONVERTER
IC412
LINE AMP

S-VKR1


LATCH
LATCH
RAM FOR THIRD-ORDER FIR
RAM FOR 11TH-ORDER FIR
ADDER
LATCH
MPY
LATCH
LATCH
ADDER
LATCH
LIMITTER
NOISE SHAPER & ARITHMETIC CIRCUIT (ROUND OFF)
ATTENUATOR 9BIT COUNTER
CALCULTATION ROM
RAM FOR 43TH-ORDER FIR
RAM FOR IIR
SERIAL→PARALLEL CONVERTER
VCC
6
9
10
11
12
13
14
15

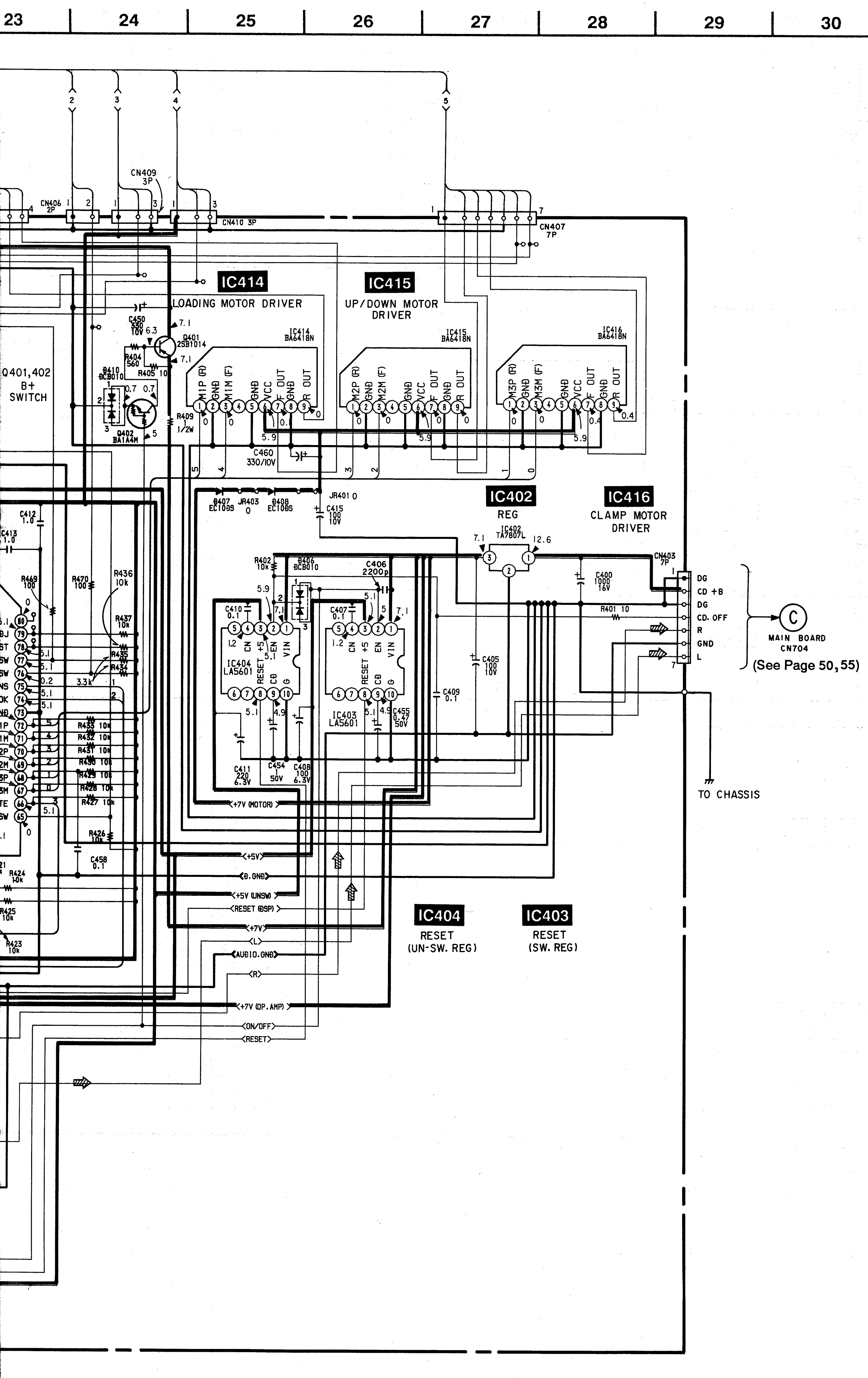
IC414, 415, 416 BA6418N


CONTROL LOGIC
TSD
DRIVER
NC
GND
1
2
3
4
5
6
7
8
9

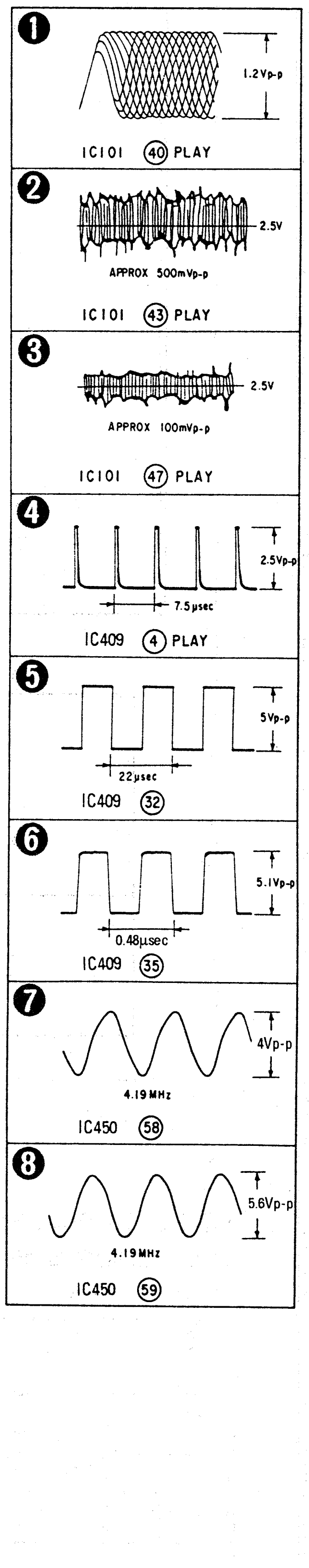
Note:
- All capacitors are in µF unless otherwise noted. pF:µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

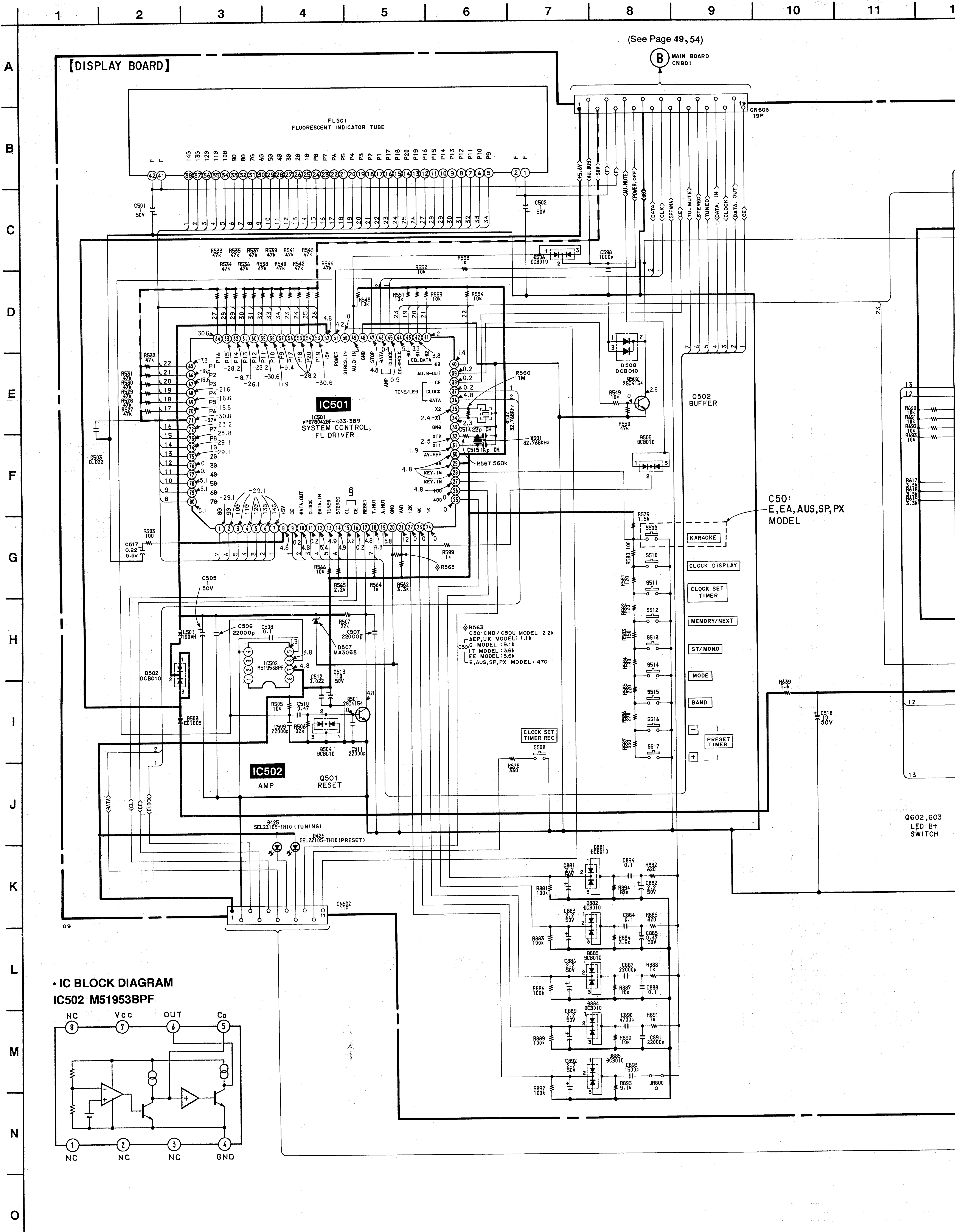
- ▬▬ : B+ Line
- ▬ ▬ ▬ : B– Line
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : CD PLAY
- Voltages are taken with a VOM (Input impedance 10Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD


23
24
25
26
27
28
29
Q401,402
B+
SWITCH
CN406 2P
CN409 3P
CN410 3P
CN407 7P
IC414
LOADING MOTOR DRIVER
IC414 BA6418N
IC415
UP/DOWN MOTOR DRIVER
IC415 BA6418N
IC416 BA6418N
M1P (R)
GND
M1M (F)
VCC
F OUT
R OUT
M2P (R)
M2M (F)
M3P (R)
M3M (F)
C450 330 10V
Q401 2SB1014
R404 560
R405 10
D410 DCB010
Q402 BA1A4M
R409 1 1/2W
C460 330/10V
D407 EC10DS
JR403 0
D408 EC10DS
JR401 0
C415 100 10V
IC402
REG
IC402 TA7807L
IC416
CLAMP MOTOR DRIVER
CN403 7P
DG
CD +B
DG
CD. OFF
R
GND
L
C400 1000 16V
R401 10
MAIN BOARD CN704
(See Page 50,55)
TO CHASSIS
C412 1.0
C413 1.0
R469 100
R470 100
R436 10k
R437 10k
R435
R434
3.3k
R433 10k
R432 10k
R431 10k
R430 10k
R429 10k
R428 10k
R427 10k
R426 10k
C458 0.1
R424 10k
R425 10k
R423 10k
R402 10k
D406 DCB010
C406 2200p
C410 0.1
C407 0.1
IC404 LA5601
IC403 LA5601
RESET
+5
EN
CN
CB
G
VIN
C411 220 6.3V
C454 1 50V
C408 100 6.3V
C455 0.47 50V
C409 0.1
C405 100 10V
<+7V (MOTOR)>
<+5V>
<D.GND>
<+5V (UNSW)>
<RESET (DSP)>
<+7V>
<L>
<AUDIO.GND>
<R>
<+7V (OP.AMP)>
<ON/OFF>
<RESET>
IC404
RESET
(UN-SW. REG)
IC403
RESET
(SW. REG)
7.1
6.3
5.9
12.6
5.1
4.9
1.2
0.7
0.4

- **Waveforms**

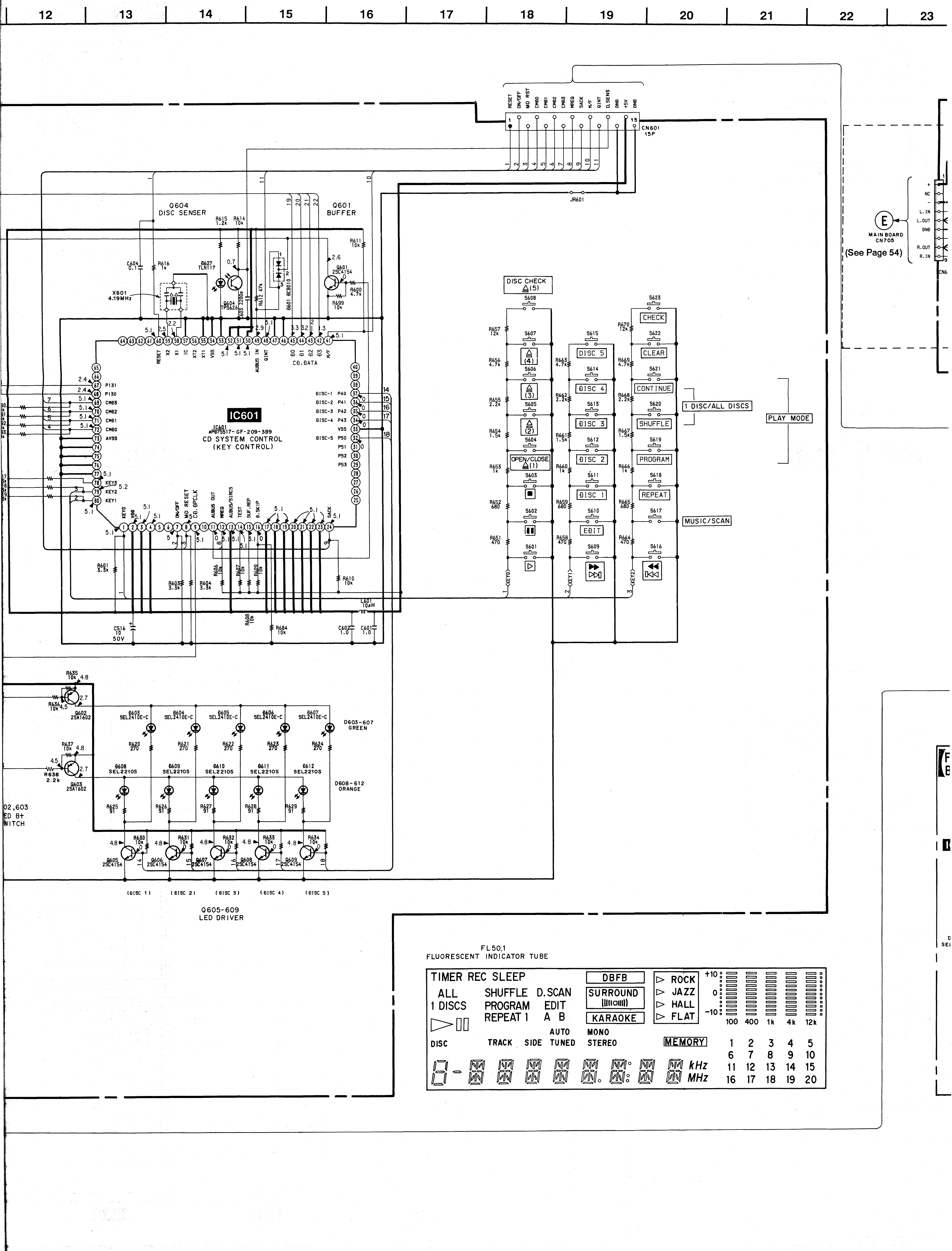


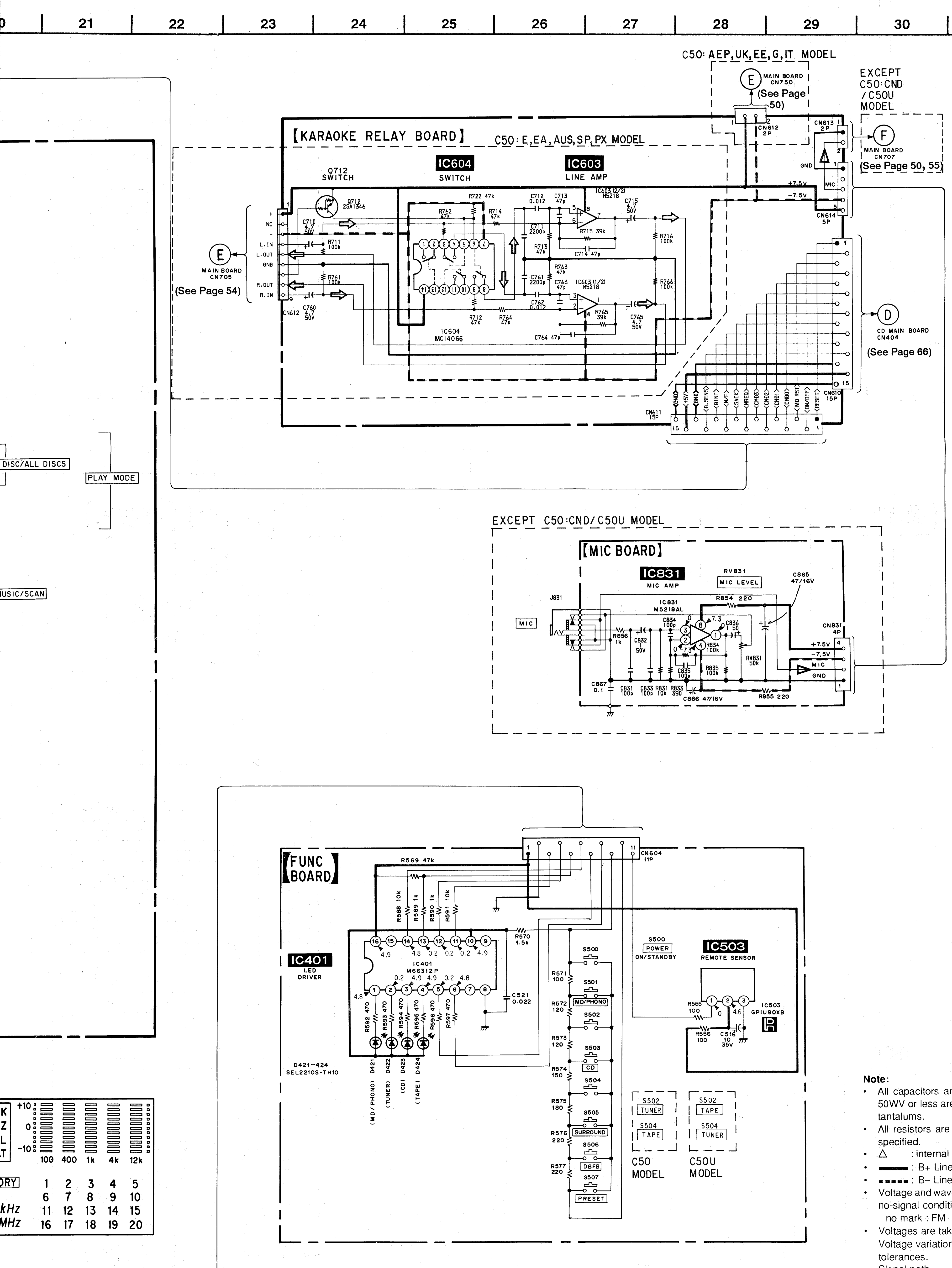
7-12. SCHEMATIC DIAGRAM
• DISPLAY SECTION


1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
(See Page 49, 54)
B
MAIN BOARD
CN801
[DISPLAY BOARD]
FL501
FLUORESCENT INDICATOR TUBE
CN603
19P
+5.6V
AU.BUS
-30V
F
AU.MUTE
POWER.OFF
BG
DATA
CLK
SPEANA
CE
TU. MUTE
STEREO
TUNED
DATA. IN
CLOCK
DATA. OUT
C501
50V
C502
50V
C503
0.022
C517
0.22
5.5V
R503
100
R527
R528
R529
R530
R531
R532
47k
R533
R534
R535
R536
R537
R538
R539
R540
R541
R542
R543
R544
R548
10k
R551
10k
R552
10k
R553
10k
R554
10k
R598
1k
C598
1000p
D506
DCB010
D508
DCB010
Q502
2SC4154
R549
10k
R550
47k
Q502
BUFFER
D505
DCB010
IC501
IC501
μPD78042GF-033-3B9
SYSTEM CONTROL,
FL DRIVER
+5V
POWER
SIRCS.IN
AU.B-IN
GND
STOP
DATA
CLOCK
CB.DPCLK
CB.DATA
AMP
TONE/LED
AU.B-OUT
CE
X2
X1
XT2
XT1
AV.REF
AV
KEY.IN
CE
DATA.OUT
CLOCK
DATA.IN
TUNED
STEREO
CL
CE
LED
RESET
T.MUT
A.MUT
GND
VAR
12K
4K
1K
R560
1M
X502
32.768KHz
X501
32.768KHz
C514 22p CH
C515 18p CH
R567 560k
R566
10k
R565
2.2k
R564
1k
R562
3.3k
R599
1k
※R563
※R563
C50:CND/C50U MODEL 2.2k
AEP,UK MODEL: 1.1k
C50: G MODEL :9.1k
IT MODEL :3.6k
EE MODEL :5.6k
E,AUS,SP,PX MODEL: 470
C505
50V
C506
22000p
C508
0.1
L501
100μH
D502
DCB010
D503
EC10DS
IC502
M51953BPF
D507
MA3068
R507
22k
C507
22000p
C512
0.022
C513
10
50V
R505
10k
C510
0.47
C509
22000p
R506
22k
D504
DCB010
C511
22000p
Q501
2SC4154
IC502
AMP
Q501
RESET
CLOCK SET
TIMER REC
S508
R578
330
R579
1.5k
S509
KARAOKE
R580 100
S510
CLOCK DISPLAY
R581
120
S511
CLOCK SET
TIMER
R582
120
S512
MEMORY/NEXT
R583
150
S513
ST/MONO
R584
180
S514
MODE
R585
220
S515
BAND
R586
270
S516
−
PRESET
TIMER
R587
330
S517
+
C50:
E,EA,AUS,SP,PX
MODEL
R639
5.6
C518
10
50V
Q602,603
LED B+
SWITCH
D425
SEL2210S-TH10 (TUNING)
D426
SEL2210S-TH10 (PRESET)
CN602
11P
D881
DCB010
C881
2.2
50V
C894
0.1
R882
620
C882
2.2
50V
R881
100k
R894
82k
D882
DCB010
C883
2.2
50V
C884
0.1
R885
820
C885
0.47
50V
R883
100k
R884
3.9k
D883
DCB010
C886
2.2
50V
C887
22000p
R888
1k
R886
100k
R887
10k
C888
0.1
D884
DCB010
C889
2.2
50V
C890
4700p
R891
1k
R889
100k
R890
10k
C891
22000p
D885
DCB010
C892
2.2
50V
C893
1500p
R892
100k
R893
9.1k
JR800
0
09

• IC BLOCK DIAGRAM
IC502 M51953BPF

NC
Vcc
OUT
Co
8
7
6
5
1
2
3
4
NC
NC
NC
GND


12
13
14
15
16
17
18
19
20
21
22
23
IC601
IC601 µPD75517-GF-209-3B9
CD SYSTEM CONTROL
(KEY CONTROL)
Q604
DISC SENSER
Q601
BUFFER
X601
4.19MHz
CN601
15P
RESET
ON/OFF
MD RST
CMD0
CMD1
CMD2
CMD3
MREQ
SACK
M/F
QINT
D.SENS
GND
+5V
GND
JR601
MAIN BOARD
CN705
(See Page 54)
DISC CHECK
OPEN/CLOSE
DISC 1
DISC 2
DISC 3
DISC 4
DISC 5
EDIT
CHECK
CLEAR
CONTINUE
SHUFFLE
PROGRAM
REPEAT
1 DISC/ALL DISCS
PLAY MODE
MUSIC/SCAN
KEY0
KEY1
KEY2
Q602,603
LED B+
SWITCH
D603-607
GREEN
D608-612
ORANGE
Q605-609
LED DRIVER
(DISC 1)
(DISC 2)
(DISC 3)
(DISC 4)
(DISC 5)
FL501
FLUORESCENT INDICATOR TUBE
TIMER REC SLEEP
ALL
1 DISCS
SHUFFLE
PROGRAM
REPEAT 1
D.SCAN
EDIT
A B
DBFB
SURROUND
KARAOKE
ROCK
JAZZ
HALL
FLAT
AUTO
MONO
DISC
TRACK
SIDE
TUNED
STEREO
MEMORY
kHz
MHz


21
22
23
24
25
26
27
28
29
30
C50: AEP,UK,EE,G,IT MODEL
E MAIN BOARD CN750 (See Page 50)
EXCEPT C50:CND /C50U MODEL
F MAIN BOARD CN707 (See Page 50, 55)
【KARAOKE RELAY BOARD】
C50: E,EA,AUS,SP,PX MODEL
IC604 SWITCH
IC603 LINE AMP
Q712 SWITCH
Q712 2SA1346
E MAIN BOARD CN705 (See Page 54)
+
NC
L.IN
L.OUT
GND
R.OUT
R.IN
CN612
CN612 2P
CN613 2P
CN614 5P
CN610 15P
CN611 15P
GND
+7.5V
-7.5V
MIC
R722 47k
R762 47k
R714 47k
C712 0.012
C713 47p
IC603 (2/2) M5218
C715 4.7 50V
C710 4.7 50V
R711 100k
C711 2200p
R715 39k
R716 100k
C714 47p
R713 47k
R763 47k
R761 100k
C761 2200p
C763 47p
IC603 (1/2) M5218
R766 100k
C760 4.7 50V
C762 0.012
R765 39k
C765 4.7 50V
R712 47k
R764 47k
IC604 MC14066
C764 47p
GND
+5V
GND
B.SENS
QINT
M/F
SACK
MREQ
CMB2
CMB1
CMB0
MD RST
ON/OFF
RESET
D CD MAIN BOARD CN404 (See Page 66)
DISC/ALL DISCS
PLAY MODE
MUSIC/SCAN
EXCEPT C50:CND/C50U MODEL
【MIC BOARD】
IC831 MIC AMP
RV831 MIC LEVEL
C865 47/16V
J831
MIC
IC831 M5218AL
R854 220
C834 100p
C836 1 50
R856 1k
C832 1 50V
R834 100k
RV831 50k
R835 100k
C835 100p
C867 0.1
C831 100p
C833 100p
R831 10k
R833 390
C866 47/16V
R855 220
CN831 4P
+7.5V
-7.5V
MIC
GND
【FUNC BOARD】
R569 47k
CN604 11P
R588 10k
R589 1k
R590 1k
R591 10k
R570 1.5k
IC401 LED DRIVER
IC401 M66312P
C521 0.022
R592 470
R593 470
R594 470
R595 470
R596 470
R597 470
D421–424 SEL2210S-TH10
D421 (MD/PHONO)
D422 (TUNER)
D423 (CD)
D424 (TAPE)
S500 POWER ON/STANDBY
IC503 REMOTE SENSOR
R555 100
R556 100
C516 10 35V
IC503 GP1U90XB
S500
S501 MD/PHONO
S502
S503 CD
S504
S505 SURROUND
S506 DBFB
S507 PRESET
R571 100
R572 120
R573 120
R574 150
R575 180
R576 220
R577 220
S502 TUNER
S504 TAPE
C50 MODEL
S502 TAPE
S504 TUNER
C50U MODEL
+10
0
-10
100
400
1k
4k
12k
1 2 3 4 5
6 7 8 9 10
11 12 13 14 15
16 17 18 19 20
kHz
MHz

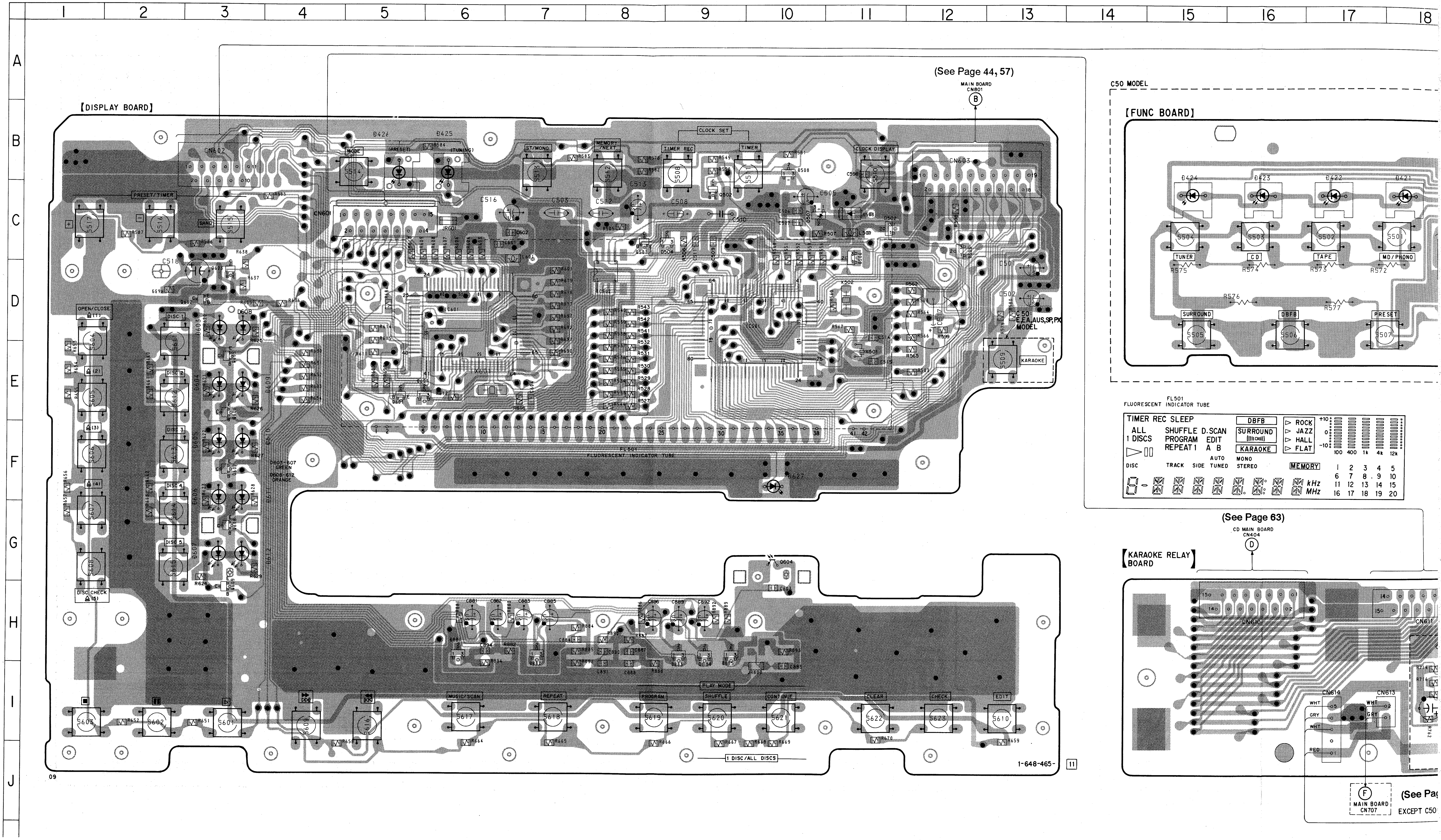
Note:

- All capacitors are in μF unless otherwise 50WV or less are not indicated except for e tantalums.
- All resistors are in Ω and 1/4W or less ur specified.
- △ : internal component.
- ▬▬ : B+ Line
- ▪▪▪▪▪ : B– Line
- Voltage and waveforms are dc with respect t no-signal conditions.
  no mark : FM
- Voltages are taken with a VOM (Input impe Voltage variations may be noted due to nor tolerances.
- Signal path.
  ⇨ : FM
  ▷ : MIC

- CND : Canadian model
- G : German model
- IT : Italian model
- EE : East European model
- EA : Saudi Arabia model
- AUS : Australian model
- SP : Singapore model

7-13. PRINTED WIRING BOARD

- DISPLAY SECTION
- See page 32 for Circuit Boards Location and see page 97, 98 for Semiconductor Lead Layouts.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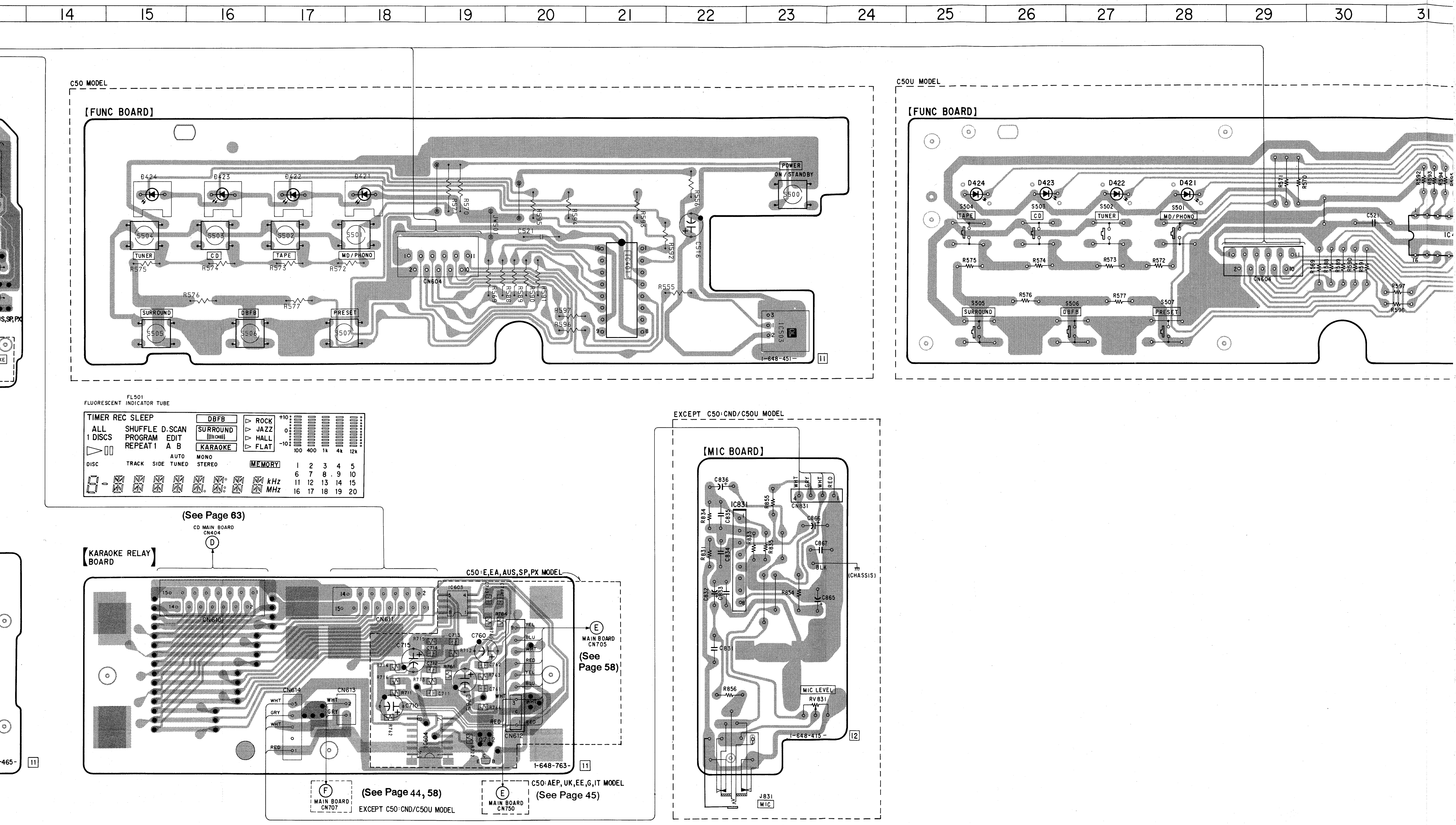
18
A
B
C
D
E
F
G
H
I
J
[DISPLAY BOARD]
(See Page 44, 57)
MAIN BOARD
CN801
B
C50 MODEL
[FUNC BOARD]
CN602
CN601
CN603
PRESET/TIMER
BAND
MODE
(PRESET)
(TUNING)
ST/MONO
MEMORY /NEXT
CLOCK SET
TIMER REC
TIMER
CLOCK DISPLAY
OPEN/CLOSE
DISC 1
DISC 2
DISC 3
DISC 4
DISC 5
DISC CHECK
D603-607 GREEN
D608-612 ORANGE
FL501 FLUORESCENT INDICATOR TUBE
C50: E,EA,AUS,SP,PX MODEL
KARAOKE
TUNER
CD
TAPE
MD/PHONO
SURROUND
DBFB
PRESET
MUSIC/SCAN
REPEAT
PROGRAM
PLAY MODE
SHUFFLE
CONTINUE
CLEAR
CHECK
EDIT
1 DISC/ALL DISCS
1-648-465-
11
09
FL501
FLUORESCENT INDICATOR TUBE
TIMER REC SLEEP
ALL
1 DISCS
SHUFFLE D.SCAN
PROGRAM EDIT
REPEAT 1 A B
DBFB
SURROUND
KARAOKE
ROCK
JAZZ
HALL
FLAT
AUTO
MONO
DISC
TRACK
SIDE
TUNED
STEREO
MEMORY
kHz
MHz
100 400 1k 4k 12k
(See Page 63)
CD MAIN BOARD
CN404
D
[KARAOKE RELAY BOARD]
CN6101
CN611
CN614
CN613
WHT
GRY
RED
F
MAIN BOARD
CN707
(See Pa
EXCEPT C50


14
15
16
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22
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24
25
26
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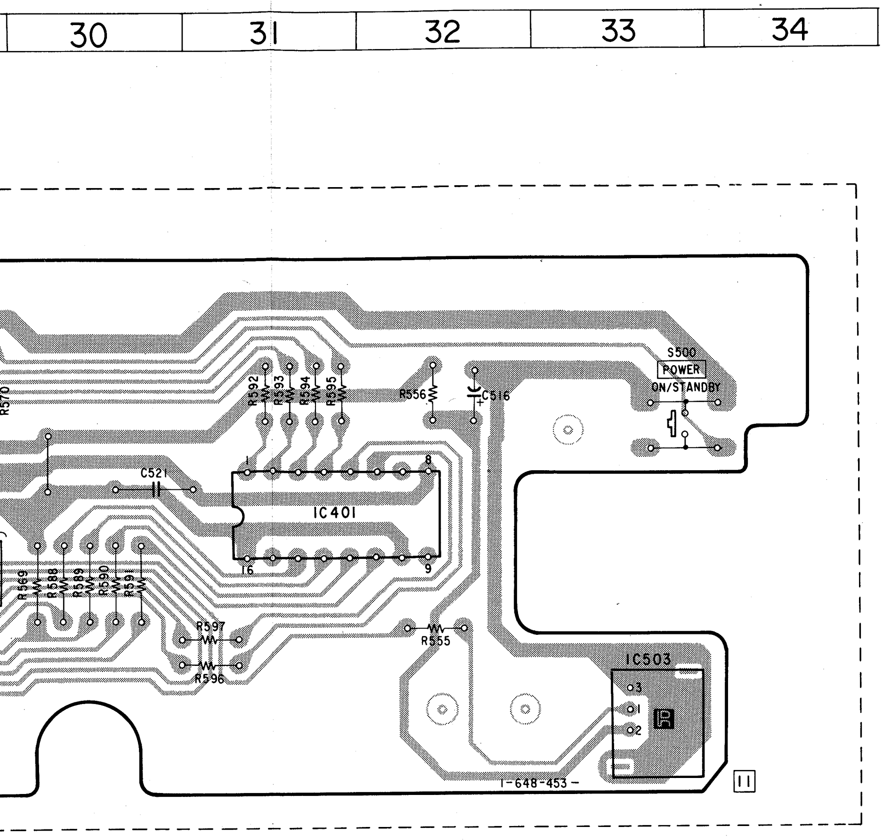
28
29
30
31
C50 MODEL
[FUNC BOARD]
D424
D423
D422
D421
S504
S503
S502
S501
S500
POWER
ON/STANDBY
TUNER
CD
TAPE
MD/PHONO
SURROUND
DBFB
PRESET
S505
S506
S507
R575
R574
R573
R572
R576
R577
R570
R571
R594
R595
R593
R592
R556
R555
R569
R588
R589
R590
R591
R597
R596
JW50
C521
C516
CN604
IC401
IC503
1-648-451-
11
C50U MODEL
[FUNC BOARD]
S504 TAPE
S503 CD
S502 TUNER
S501 MD/PHONO
S505 SURROUND
S506 DBFB
S507 PRESET
FL501
FLUORESCENT INDICATOR TUBE
TIMER REC SLEEP
ALL
1 DISCS
SHUFFLE D.SCAN
PROGRAM EDIT
REPEAT 1 A B
DBFB
SURROUND
KARAOKE
ROCK
JAZZ
HALL
FLAT
+10
0
-10
100
400
1k
4k
12k
AUTO
MONO
DISC
TRACK
SIDE
TUNED
STEREO
MEMORY
1 2 3 4 5
6 7 8 . 9 10
11 12 13 14 15
16 17 18 19 20
kHz
MHz
(See Page 63)
CD MAIN BOARD
CN404
D
[KARAOKE RELAY BOARD]
CN610
CN611
CN613
CN614
CN612
IC603
IC604
C715
C714
C713
C712
C711
C710
C760
C761
C762
C763
C764
C765
R711
R712
R713
R714
R715
R716
R761
R762
R763
R764
R765
R766
Q712
E
C
B
YEL
BLU
WHT
RED
GRY
C50:E,EA,AUS,SP,PX MODEL
E
MAIN BOARD
CN705
(See Page 58)
1-648-763-
11
F
MAIN BOARD
CN707
(See Page 44, 58)
EXCEPT C50:CND/C50U MODEL
E
MAIN BOARD
CN750
C50:AEP,UK,EE,G,IT MODEL
(See Page 45)
EXCEPT C50:CND/C50U MODEL
[MIC BOARD]
C836
C835
C834
C833
C832
C831
C866
C867
C865
IC831
R834
R831
R833
R835
R855
R854
R856
CN831
WHT
GRY
WHT
RED
BLK
(CHASSIS)
MIC LEVEL
RV831
1-648-415-
12
J831
MIC


30
31
32
33
34
R570
R592
R593
R594
R595
R556
C516
S500
POWER
ON/STANDBY
C521
IC401
1
8
16
9
R569
R588
R589
R590
R591
R597
R596
R555
IC503
3
1
2
1-648-453-
11

- **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D421 ○	C-18	D881	I-6
D421 ●	C-28	D882	I-7
D422 ○	C-17	D883	I-9
C422 ●	C-27	D884	I-9
D423 ○	C-16	D885	I-10
D423 ●	C-26		
D424 ○	C-15	IC401 ○	C-21
D424 ●	C-25	IC401 ●	C-31
D425	B-6	IC501	D-10
D426	B-5	IC502	D-8
D502	C-11	IC503 ○	D-23
D503	C-11	IC503 ●	D-33
D504	C-9	IC601	D-6
D505	C-12	IC603	H-19
D506	C-11	IC604	J-19
D507	C-10	IC831	G-23
D508	B-10		
D601	E-6	Q501	C-8
D603	D-3	Q502	C-9
D604	E-3	Q601	E-5
D605	F-3	Q602	D-3
D606	G-3	Q603	D-3
D607	G-3	Q604	G-10
D608	D-3	Q605	E-3
D609	E-3	Q606	E-3
D610	F-3	Q607	F-3
D611	G-3	Q608	G-3
D612	G-3	Q609	H-3
D627	F-10	Q712	J-19

○ : (C50)
● : (C50U)

Note:

- o—— : parts extracted from the components side.
- ● : Through hole.
- ░ : Pattern on the side which is seen.
- ▒ : Pattern of the rear side.

- CND : Canadian model
- G : German model
- IT : Italian model
- EE : East European model
- EA : Saudi Arabia model
- AUS : Australian model
- SP : Singapore model

7-14. PRINTED WIRING BOARD

- DECK SECTION (HCD-C50)
- See page 32 for Circuit Boards Location and see page 97, 98 for Semiconductor Lead Layouts.

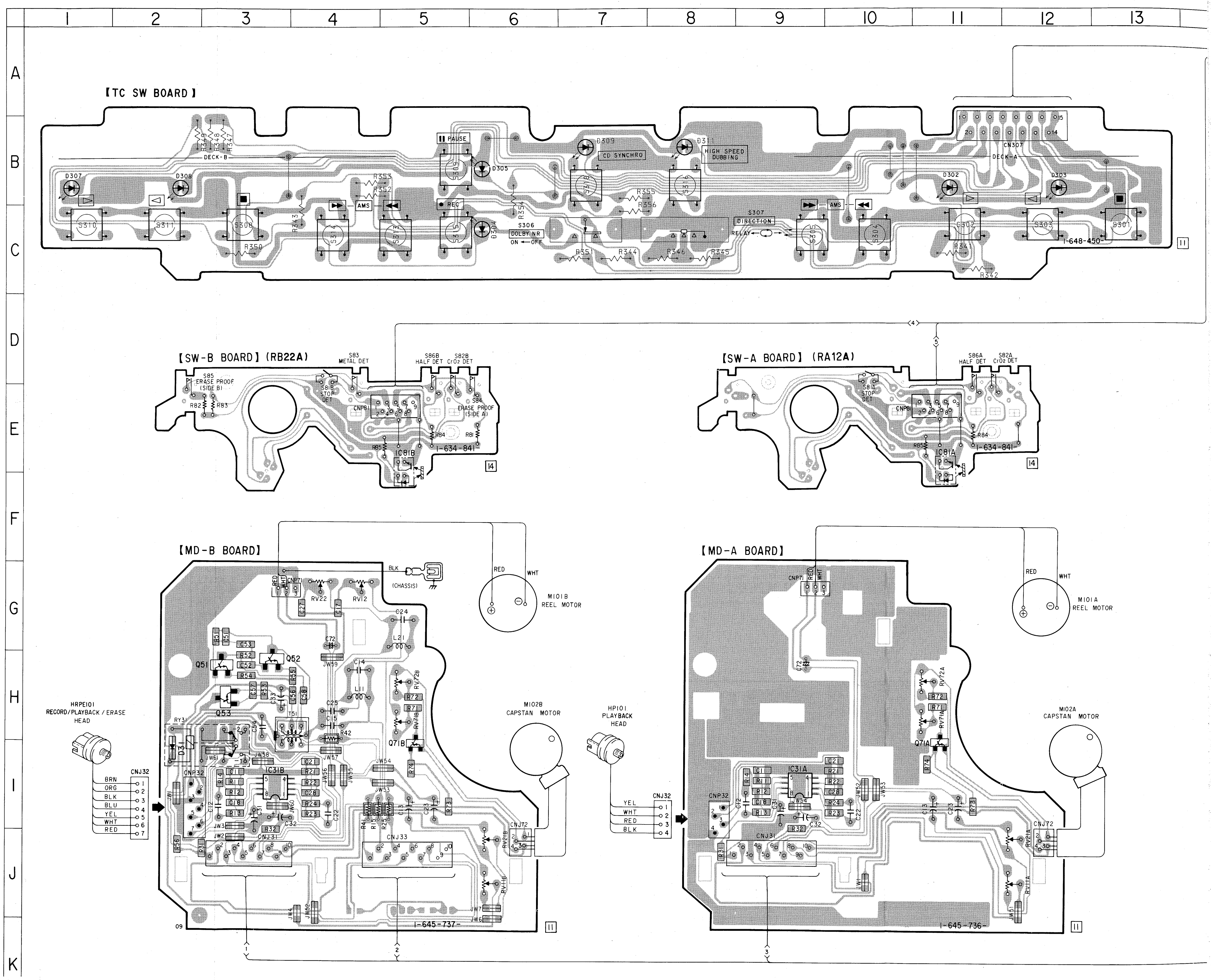
Not

- **Semiconductor Location**

Ref. No.	Location
D31	I-2
D201	E-16
D202	I-16
D203	I-16
D204	E-15
D205	D-15
D206	B-22
D207	I-24
D208	H-23
D302	B-11
D303	B-12
D304	C-6
D305	B-6
D307	B-1
D308	B-2
D309	B-7
D311	B-8
IC31A	I-9
IC31B	I-3
IC81A	F-11
IC81B	F-5
IC201	E-22
IC202	E-19
IC203	G-18
IC204	F-16
Q51	H-3
Q52	H-3
Q53	H-3
Q71A	I-11
Q71B	I-5
Q201	D-23
Q210	D-16
Q211	D-20
Q212	D-16
Q213	D-17
Q214	E-17
Q215	E-17
Q216	E-16
Q217	E-16
Q218	D-16
Q219	D-16
Q220	I-17
Q221	H-17
Q222	H-15
Q223	H-17
Q224	H-17
Q301	D-23

Note:

- ○—— : parts extracted from the components side.
- ⁚⁚⁚⁚ : Pattern on the side which is seen.



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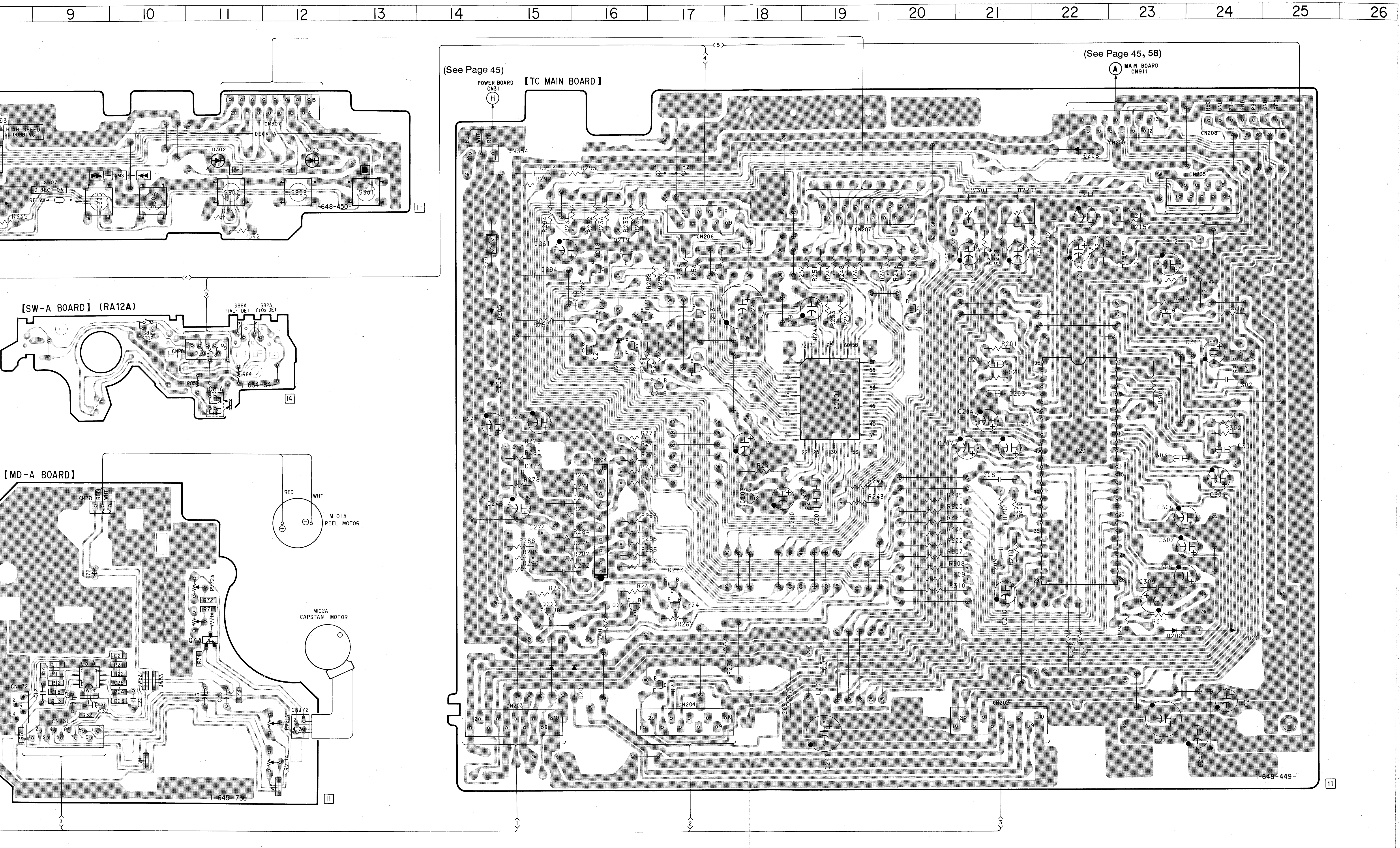
A
B
C
D
E
F
G
H
I
J
K
【TC SW BOARD】
DECK-B
DECK-A
CN307
II PAUSE
● REC
AMS
CD SYNCHRO
HIGH SPEED DUBBING
S306
DOLBY NR
ON ←— OFF
S307
DIRECTION
RELAY
D302
D303
D304
D305
D307
D308
D309
D311
S301
S302
S303
S304
S305
S308
S309
S310
S311
S312
S313
S314
S315
S316
R341
R342
R343
R344
R345
R346
R347
R348
R349
R350
R351
R352
R353
R354
R355
R356
1-648-450-
11
【SW-B BOARD】(RB22A)
S83
METAL DET
S86B
HALF DET
S82B
CrO2 DET
S85
ERASE PROOF
(SIDE B)
S81B
STOP DET
S84
ERASE PROOF
(SIDE A)
CNP81
IC81B
R81
R82
R83
R84
R85
1-634-841-
14
【SW-A BOARD】(RA12A)
S86A
HALF DET
S82A
CrO2 DET
S81A
STOP DET
IC81A
1-634-841-
14
【MD-B BOARD】
BLK
(CHASSIS)
RED
WHT
M101B
REEL MOTOR
M102B
CAPSTAN MOTOR
HRPE101
RECORD/PLAYBACK/ERASE
HEAD
CNJ32
BRN
ORG
BLK
BLU
YEL
WHT
RED
CNP71
RV22
RV12
C24
L21
C14
L11
Q51
Q52
Q53
T51
RY31
D31
Q71B
IC31B
CNP32
CNJ31
CNJ33
CNJ72
RV71B
RV72B
RV21B
RV11B
1-645-737-
11
【MD-A BOARD】
M101A
REEL MOTOR
M102A
CAPSTAN MOTOR
HP101
PLAYBACK
HEAD
CNJ32
YEL
WHT
RED
BLK
CNP71
CNP32
CNJ31
IC31A
Q71A
CNJ72
RV71A
RV72A
RV21A
RV11A
1-645-736-
11

9
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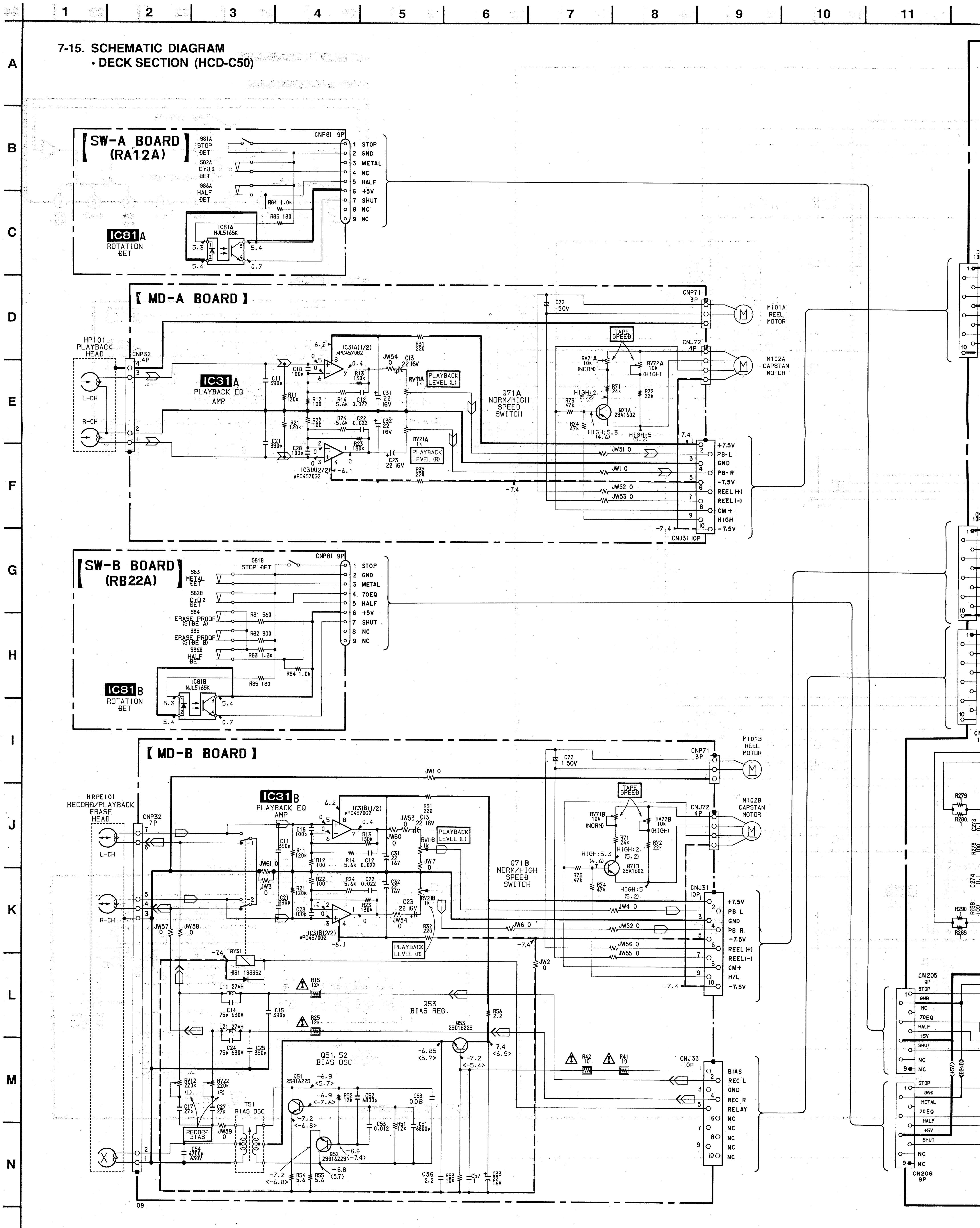
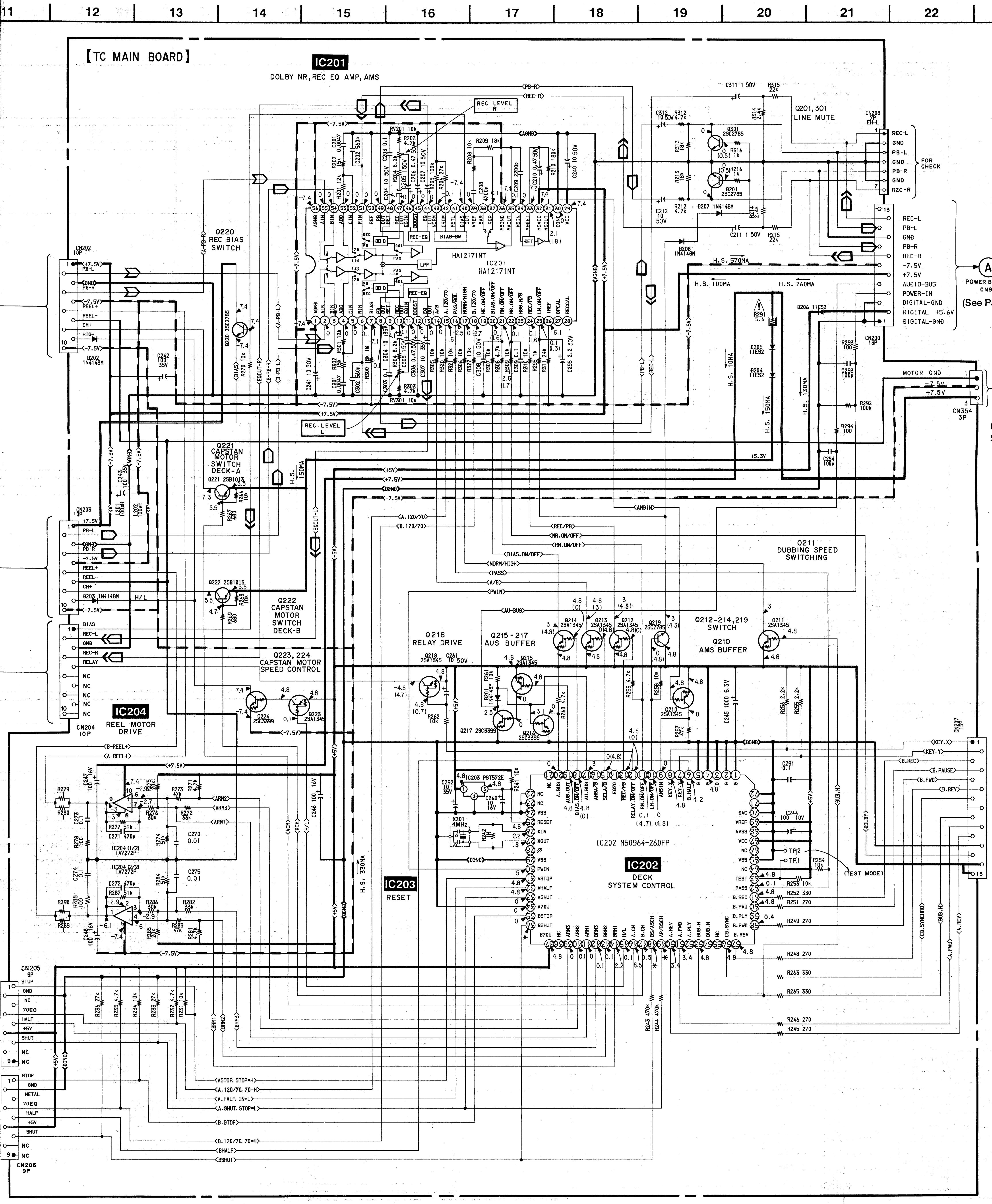
26
(See Page 45)
POWER BOARD CN31
H
【TC MAIN BOARD】
(See Page 45, 58)
A MAIN BOARD CN911
REC-R
GND
PB-R
GND
PB-L
GND
REC-L
CN208
CN200
CN205
CN206
CN207
CN354
BLU
WHT
RED
TP1
TP2
RV301
RV201
IC201
IC202
IC204
X201
CN203
CN204
CN202
1-648-449-
11
HIGH SPEED DUBBING
S307 DIRECTION
RELAY
DECK-A
AMS
CN307
D302
D303
S301
S302
S303
S304
S305
1-648-450-
11
【SW-A BOARD】 (RA12A)
S86A HALF DET
S82A CrO2 DET
S81A STOP DET
CN81
IC81A
R84
R85
1-634-841-
14
【MD-A BOARD】
CNP71
RED
WHT
M101A REEL MOTOR
M102A CAPSTAN MOTOR
RV72A
RV71A
Q71A
IC31A
CNP32
CNJ31
CNJ72
RV21A
RV11A
1-645-736-
11
1
2
3
4
5

7-15. SCHEMATIC DIAGRAM

• DECK SECTION (HCD-C50)



SW-A BOARD (RA12A)
S81A STOP DET
S82A CrO2 DET
S86A HALF DET
IC81A NJL5165K
IC81 A ROTATION DET
CNP81 9P
1 STOP
2 GND
3 METAL
4 NC
5 HALF
6 +5V
7 SHUT
8 NC
9 NC
R84 1.0k
R85 180
MD-A BOARD
HP101 PLAYBACK HEAD
L-CH
R-CH
CNP32 4P
IC31 A PLAYBACK EQ AMP
IC31A(1/2) μPC4570G2
IC31A(2/2) μPC4570G2
PLAYBACK LEVEL (L)
PLAYBACK LEVEL (R)
RV11A 1k
RV21A 1k
Q71A NORM/HIGH SPEED SWITCH
Q71A 2SA1602
TAPE SPEED
RV71A 10k (NORM)
RV72A 10k (HIGH)
CNP71 3P
M101A REEL MOTOR
CNJ72 4P
M102A CAPSTAN MOTOR
CNJ31 10P
+7.5V
PB-L
GND
PB-R
-7.5V
REEL (+)
REEL (-)
CM +
HIGH
-7.5V
SW-B BOARD (RB22A)
S81B STOP DET
S83 METAL DET
S82B CrO2 DET
S84 ERASE PROOF (SIDE A)
S85 ERASE PROOF (SIDE B)
S86B HALF DET
IC81B NJL5165K
IC81 B ROTATION DET
CNP81 9P
1 STOP
2 GND
3 METAL
4 70EQ
5 HALF
6 +5V
7 SHUT
8 NC
9 NC
R81 560
R82 300
R83 1.3k
R84 1.0k
R85 180
MD-B BOARD
HRPE101 RECORD/PLAYBACK ERASE HEAD
CNP32 7P
IC31 B PLAYBACK EQ AMP
IC31B(1/2) μPC4570G2
IC31B(2/2) μPC4570G2
PLAYBACK LEVEL (L)
PLAYBACK LEVEL (R)
RV11B 1k
RV21B 1k
RY31
D31 1SS352
L11 27μH
L21 27μH
Q53 BIAS REG.
Q53 2SD1622S
Q51, 52 BIAS OSC
Q51 2SD1622S
Q52 2SD1622S
T51 BIAS OSC
RECORD BIAS
RV12 220k (L)
RV22 220k (R)
Q71B NORM/HIGH SPEED SWITCH
Q71B 2SA1602
TAPE SPEED
RV71B 10k (NORM)
RV72B 10k (HIGH)
CNP71 3P
M101B REEL MOTOR
CNJ72 4P
M102B CAPSTAN MOTOR
CNJ31 10P
+7.5V
PB L
GND
PB R
-7.5V
REEL (+)
REEL (-)
CM+
H/L
-7.5V
CNJ33 10P
BIAS
REC L
GND
REC R
RELAY
NC
NC
NC
NC
NC
CN205 9P
STOP
GND
NC
70EQ
HALF
+5V
SHUT
NC
NC
CN206 9P
STOP
GND
METAL
70EQ
HALF
+5V
SHUT
NC
NC
(+5V)
(BGND)
R279
R280
R278 100
C273 0.1
C274 0.1
R288 100
R290
R289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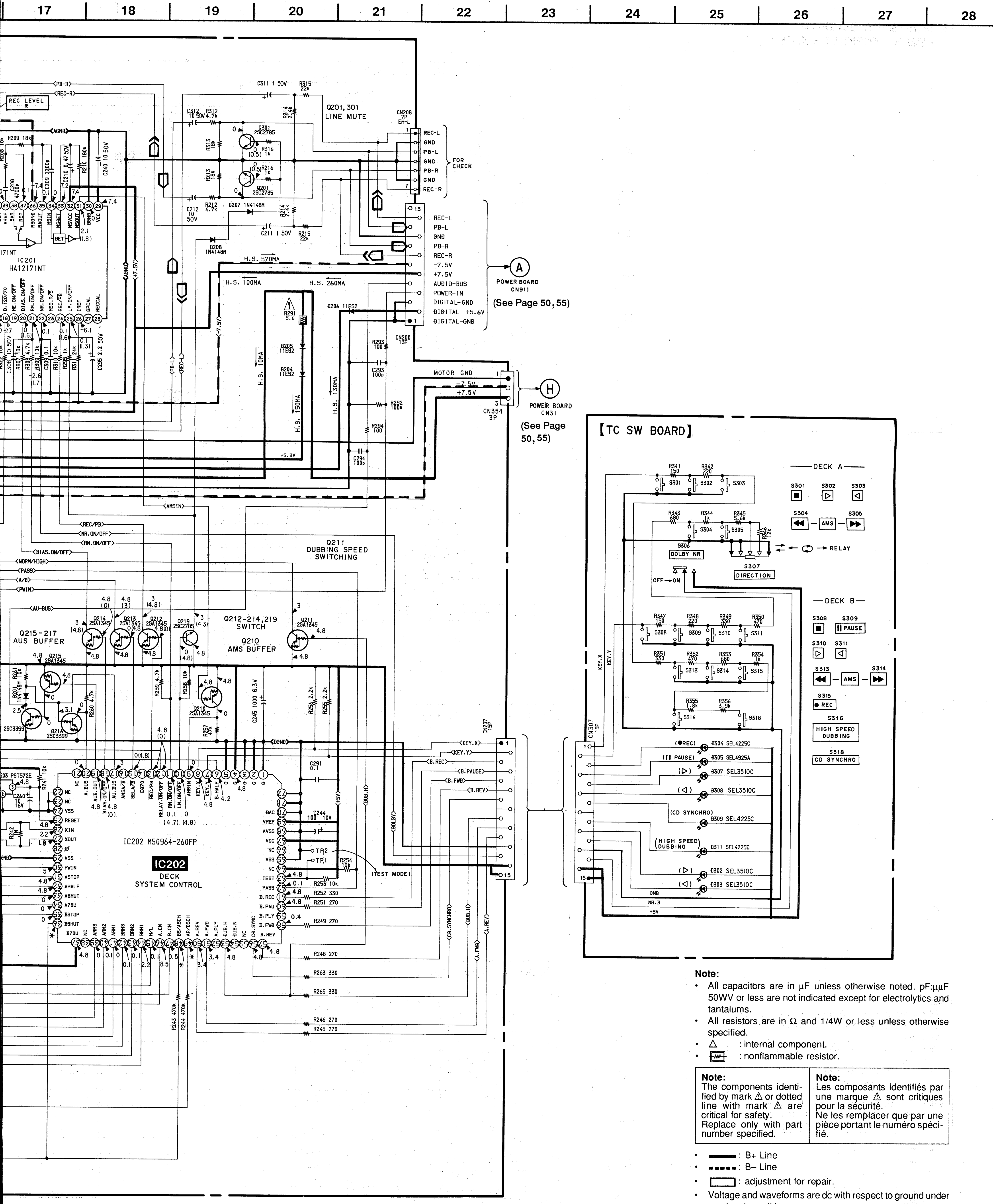
22
【TC MAIN BOARD】
IC201
DOLBY NR, REC EQ AMP, AMS
IC201 HA12171NT
REC LEVEL R
REC LEVEL L
Q220 REC BIAS SWITCH
Q221 CAPSTAN MOTOR SWITCH DECK-A
Q222 CAPSTAN MOTOR SWITCH DECK-B
Q223, 224 CAPSTAN MOTOR SPEED CONTROL
IC204
REEL MOTOR DRIVE
IC204 (1/2) TA7272P
IC204 (2/2) TA7272P
IC203
RESET
IC203 PST572E
Q218 RELAY DRIVE
Q215-217 AUS BUFFER
Q212-214, 219 SWITCH
Q210 AMS BUFFER
Q211 DUBBING SPEED SWITCHING
Q201, 301 LINE MUTE
IC202 M50964-260FP
IC202
DECK SYSTEM CONTROL
(TEST MODE)
CN202 10P
CN203 10P
CN204 10P
CN205 9P
CN206 9P
CN207 15P
CN208 7P EH-L
CN200 13P
CN354 3P
REC-L
GND
PB-L
GND
PB-R
GND
REC-R
FOR CHECK
REC-L
PB-L
GND
PB-R
REC-R
-7.5V
+7.5V
AUDIO-BUS
POWER-IN
DIGITAL-GND
DIGITAL +5.6V
DIGITAL-GND
POWER B
CN9
(See P
MOTOR GND
-7.5V
+7.5V
H.S. 570MA
H.S. 100MA
H.S. 260MA
H.S. 10MA
H.S. 150MA
H.S. 130MA
H.S. 330MA
+5.3V


17
18
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23
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25
26
27
28
IC201
HA12171NT
REC LEVEL R
Q201,301
LINE MUTE
CN208 7P EH-L
REC-L
GND
PB-L
GND
PB-R
GND
REC-R
FOR CHECK
REC-L
PB-L
GND
PB-R
REC-R
-7.5V
+7.5V
AUDIO-BUS
POWER-IN
DIGITAL-GND
DIGITAL +5.6V
DIGITAL-GND
POWER BOARD CN911
(See Page 50,55)
CN200 13P
MOTOR GND
-7.5V
+7.5V
CN354 3P
POWER BOARD CN31
(See Page 50,55)
H.S. 570MA
H.S. 100MA
H.S. 260MA
H.S. 10MA
H.S. 150MA
H.S. 130MA
Q211
DUBBING SPEED
SWITCHING
Q215-217
AUS BUFFER
Q212-214,219
SWITCH
Q210
AMS BUFFER
IC202 M50964-260FP
IC202
DECK
SYSTEM CONTROL
(TEST MODE)
CN207 15P
【TC SW BOARD】
CN307 15P
KEY.X
KEY.Y
DOLBY NR
OFF→ON
DIRECTION
RELAY
—DECK A—
S301
S302
S303
S304
AMS
S305
—DECK B—
S308
S309
PAUSE
S310
S311
S313
S314
S315
REC
S316
HIGH SPEED DUBBING
S318
CD SYNCHRO
(●REC) D304 SEL4225C
(II PAUSE) D305 SEL4925A
(▷) D307 SEL3510C
(◁) D308 SEL3510C
(CD SYNCHRO) D309 SEL4225C
(HIGH SPEED DUBBING) D311 SEL4225C
(▷) D302 SEL3510C
(◁) D303 SEL3510C
GND
NR.B
+5V

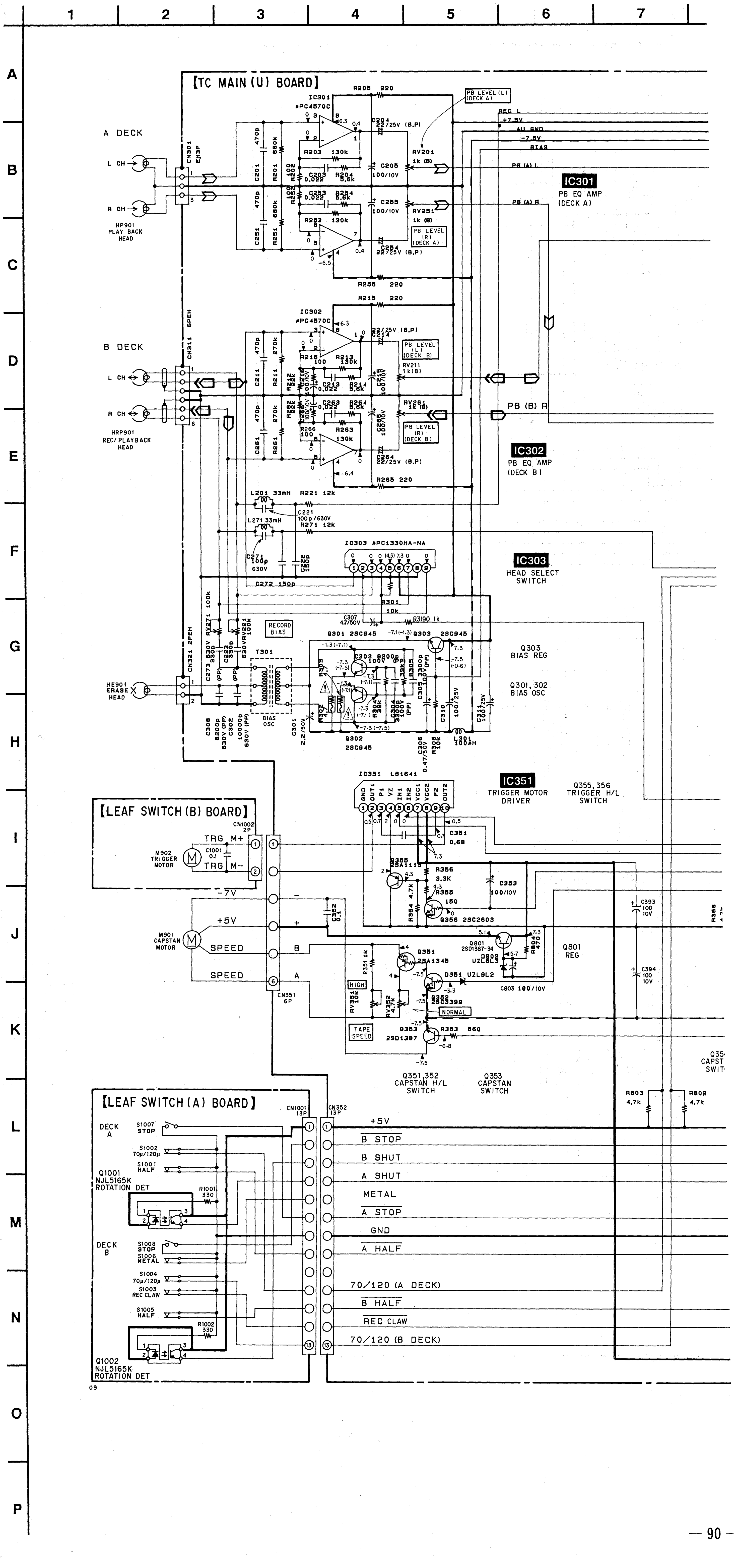
Note:

- All capacitors are in μF unless otherwise noted. pF:μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- ▭ : nonflammable resistor.

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.	**Note:** Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- ▬ : B+ Line
- ╍ : B– Line
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : PB
  (   ) : REC
- Voltages are taken with a VOM (Input impedance 10Ω).
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⊳ : PB (DECK A)
  ▷ : PB (DECK B)
  ▷› : REC (DECK B)

7-16. SCHEMATIC DIAGRAM
• DECK SECTION (HCD-C50U)



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A
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H
I
J
K
L
M
N
O
P
[TC MAIN (U) BOARD]
A DECK
L CH
R CH
HP901
PLAY BACK
HEAD
CN301
EH3P
IC301
μPC4570C
R205 220
PB LEVEL (L)
(DECK A)
REC L
+7.8V
AU GND
-7.8V
BIAS
PB (A) L
PB (A) R
RV201
1k (B)
RV251
1k (B)
PB LEVEL
(R)
(DECK A)
R255 220
IC301
PB EQ AMP
(DECK A)
B DECK
HRP901
REC/PLAYBACK
HEAD
CN311 6PEH
IC302
μPC4570C
R215 220
PB LEVEL
(L)
(DECK B)
RV211
1k (B)
RV261
1k (B)
PB LEVEL
(R)
(DECK B)
R265 220
PB (B) R
IC302
PB EQ AMP
(DECK B)
L201 33mH
R221 12k
L271 33mH
R271 12k
C221
100p/630V
C271
100p
630V
C272 150p
C222
150p
IC303 μPC1330HA-NA
IC303
HEAD SELECT
SWITCH
R301
10k
R319 1k
C307
4.7/50V
RECORD
BIAS
Q301 2SC945
Q303 2SC945
Q303
BIAS REG
Q301, 302
BIAS OSC
T301
BIAS
OSC
HE901
ERASE
HEAD
CN321 2PEH
Q302
2SC945
L301
100μH
IC351 LB1641
IC351
TRIGGER MOTOR
DRIVER
Q355, 356
TRIGGER H/L
SWITCH
GND
OUT1
P1
VZ
IN1
IN2
VCC1
VCC2
P2
OUT2
C351
0.68
C353
100/10V
R356
3.3K
R355
150
R354 4.7k
Q355 2SA1115
Q356 2SC2603
[LEAF SWITCH (B) BOARD]
CN1002
2P
M902
TRIGGER
MOTOR
TRG M+
TRG M-
C1001
0.1
-7V
+5V
SPEED
SPEED
M901
CAPSTAN
MOTOR
CN351
6P
C352
0.1
Q801
2SD1387-34
D801
UZL6L5
R804
470
C803 100/10V
Q801
REG
C393
100
10V
C394
100
10V
Q351
2SA1345
D351 UZL9L2
Q352
2SC3399
R351 1k
HIGH
RV351
10k
RV352
4.7k
NORMAL
TAPE
SPEED
Q353
2SD1387
R353 560
Q351,352
CAPSTAN H/L
SWITCH
Q353
CAPSTAN
SWITCH
R803
4.7k
R802
4.7k
[LEAF SWITCH (A) BOARD]
CN1001
13P
CN352
13P
DECK
A
S1007
STOP
S1002
70μ/120μ
S1001
HALF
Q1001
NJL5165K
ROTATION DET
R1001
330
DECK
B
S1008
STOP
S1006
METAL
S1004
70μ/120μ
S1003
REC CLAW
S1005
HALF
R1002
330
Q1002
NJL5165K
ROTATION DET
+5V
B STOP
B SHUT
A SHUT
METAL
A STOP
GND
A HALF
70/120 (A DECK)
B HALF
REC CLAW
70/120 (B DECK)

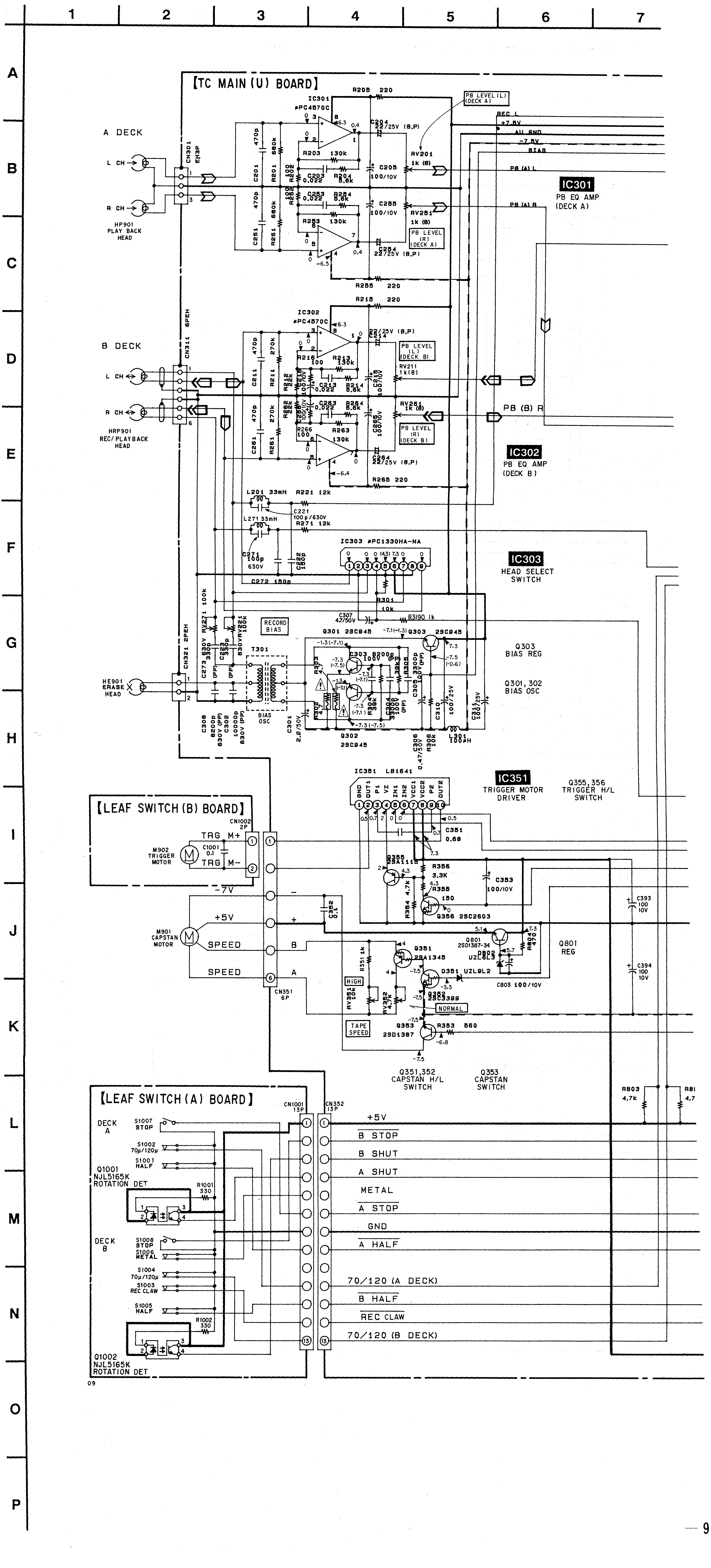
Note:

- All capacitors are in μF unless otherwise noted. pF:μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- ⊏ : fusible resistor.

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

- ▬▬ : B+ Line
- ▪▪▪▪▪ : B– Line
- ☐ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : PB
  ( ) : REC
- Voltages are taken with a VOM (Input impedance 10Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ▷ : PB (DECK A)
  ▷ : PB (DECK B)
  ▷ : REC (DECK B)

7-16. SCHEMATIC DIAGRAM
• DECK SECTION (HCD-C50U)



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A
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D
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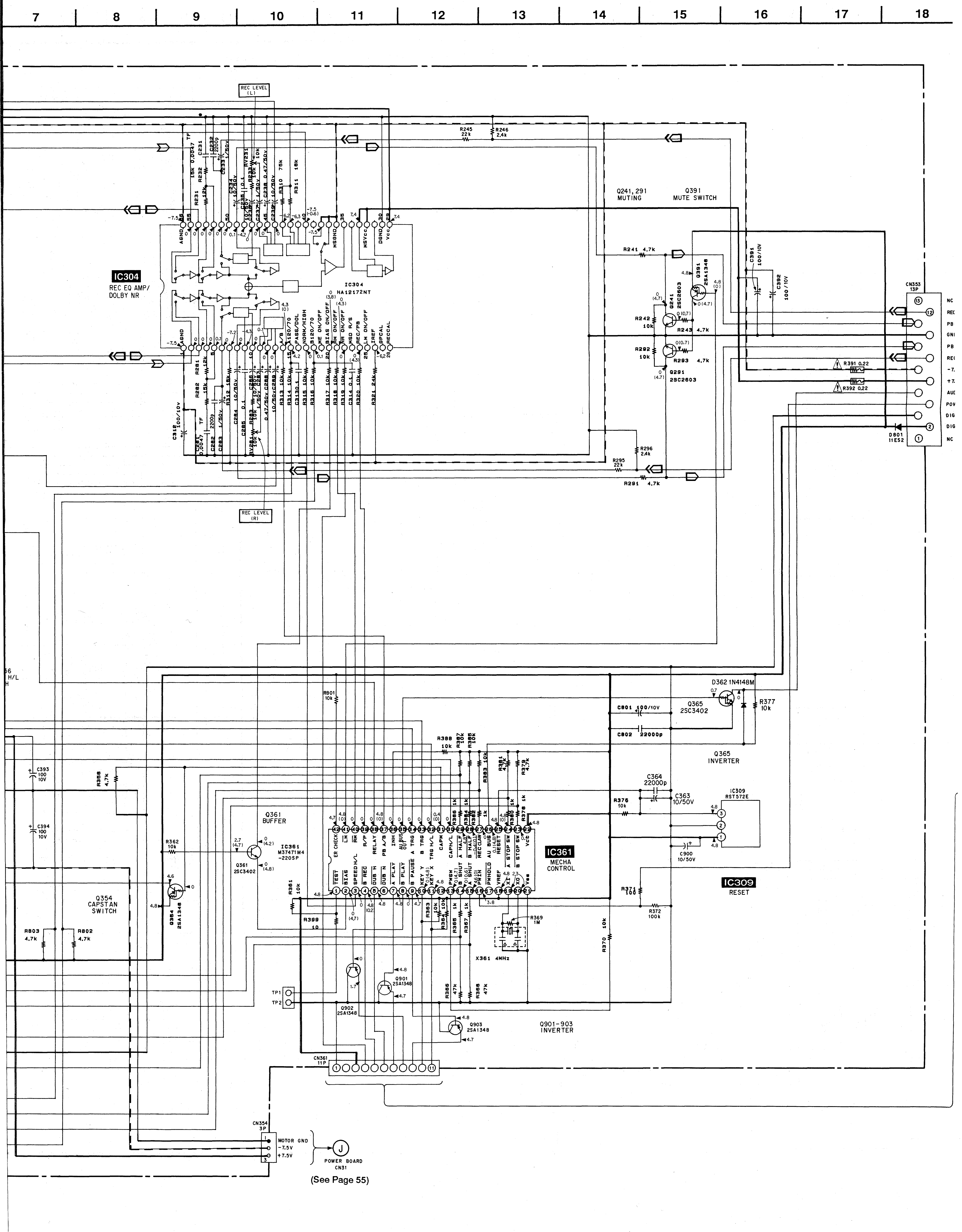
G
H
I
J
K
L
M
N
O
P
[TC MAIN (U) BOARD]
A DECK
L CH
R CH
HP901
PLAY BACK
HEAD
CN301
EH3P
IC301
μPC4570C
R205 220
PB LEVEL (L)
(DECK A)
REC L
+7.5V
AU GND
-7.5V
BIAS
PB (A) L
PB (A) R
RV201
1k (B)
RV251
1k (B)
PB LEVEL
(R)
(DECK A)
C205
100/10V
C255
100/10V
C204
22/25V (B.P)
C254
22/25V (B.P)
R203 130k
R253 130k
R204 5.6k
R254 5.6k
C203 0.022
C253 0.022
C201 470p
C251 470p
R201 680k
R251 680k
R202 100
R252 100
R255 220
R215 220
IC301
PB EQ AMP
(DECK A)
B DECK
CN311 6PEH
HRP901
REC/PLAYBACK
HEAD
IC302
μPC4570C
C211 470p
C261 470p
R211 270k
R261 270k
R216 100
R266 100
R213 130k
R263 130k
R214 5.6k
R264 5.6k
C213 0.022
C263 0.022
C215 100/10V
C265 100/10V
C214 22/25V (B.P)
C264 22/25V (B.P)
PB LEVEL
(L)
(DECK B)
PB LEVEL
(R)
(DECK B)
RV211
1k(B)
RV261
1k (B)
R265 220
PB (B) R
IC302
PB EQ AMP
(DECK B)
L201 33mH
R221 12k
C221
100p/630V
L271 33mH
R271 12k
C271
100p
630V
C222 150p
C272 150p
IC303 μPC1330HA-NA
IC303
HEAD SELECT
SWITCH
R301
10k
R3190 1k
C307
4.7/50V
Q301 2SC945
Q303 2SC945
Q302
2SC945
Q303
BIAS REG
Q301, 302
BIAS OSC
RECORD
BIAS
CN321 2PEH
RV271 100k
RV221 100k
630V
C273 330p
C223 330p
T301
BIAS
OSC
C303 8200p
100V
C304 3300p
100V
(PP)
C305 3300p
100V
(PP)
C310
100/25V
C311
100/25V
L301
100μH
C306
0.47/50V
R306
10k
C301
2.2/50V
C308
8200p
630V (PP)
C302
10000p
630V (PP)
R302
R303
R304
39k
R305
39k
HE901
ERASE
HEAD
IC351 LB1641
GND
OUT1
P1
VZ
IN1
IN2
VCC1
VCC2
P2
OUT2
IC351
TRIGGER MOTOR
DRIVER
Q355,356
TRIGGER H/L
SWITCH
C351
0.68
Q355
2SA1115
R356
3.3K
R355
150
C353
100/10V
R354 4.7k
Q356 2SC2603
Q801
2SD1387-34
D802
UZL8L3
R804
470
Q801
REG
C803 100/10V
C393
100
10V
C394
100
10V
R803
4.7k
R81
4.7
[LEAF SWITCH (B) BOARD]
CN1002
2P
TRG M+
TRG M-
C1001
0.1
M902
TRIGGER
MOTOR
-7V
+5V
SPEED
SPEED
M901
CAPSTAN
MOTOR
CN351
6P
C352
0.1
Q351
2SA1345
R351 1k
RV351
10k
HIGH
RV352
4.7k
D351 UZL8L2
Q352
2SC3399
NORMAL
TAPE
SPEED
Q353
2SD1387
R353 560
Q351,352
CAPSTAN H/L
SWITCH
Q353
CAPSTAN
SWITCH
[LEAF SWITCH (A) BOARD]
CN1001
13P
CN352
13P
DECK
A
S1007
STOP
S1002
70μ/120μ
S1001
HALF
Q1001
NJL5165K
ROTATION DET
R1001
330
DECK
B
S1008
STOP
S1006
METAL
S1004
70μ/120μ
S1003
REC CLAW
S1005
HALF
R1002
330
Q1002
NJL5165K
ROTATION DET
+5V
B STOP
B SHUT
A SHUT
METAL
A STOP
GND
A HALF
70/120 (A DECK)
B HALF
REC CLAW
70/120 (B DECK)
09

Note:

- All capacitors are in μF unless otherwise noted. pF:μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- ⊣w∿⊢ : fusible resistor.

Note: The components identified by mark △ or dotted line with mark △ are critical for safety.
Replace only with part number specified.

- ▬ : B+ Line
- ▪▪▪▪▪ : B– Line
- ☐ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : PB
  (　　) : REC
- Voltages are taken with a VOM (Input impedance 10Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⊳ : PB (DECK A)
  ▷ : PB (DECK B)
  ▷› : REC (DECK B)


7
8
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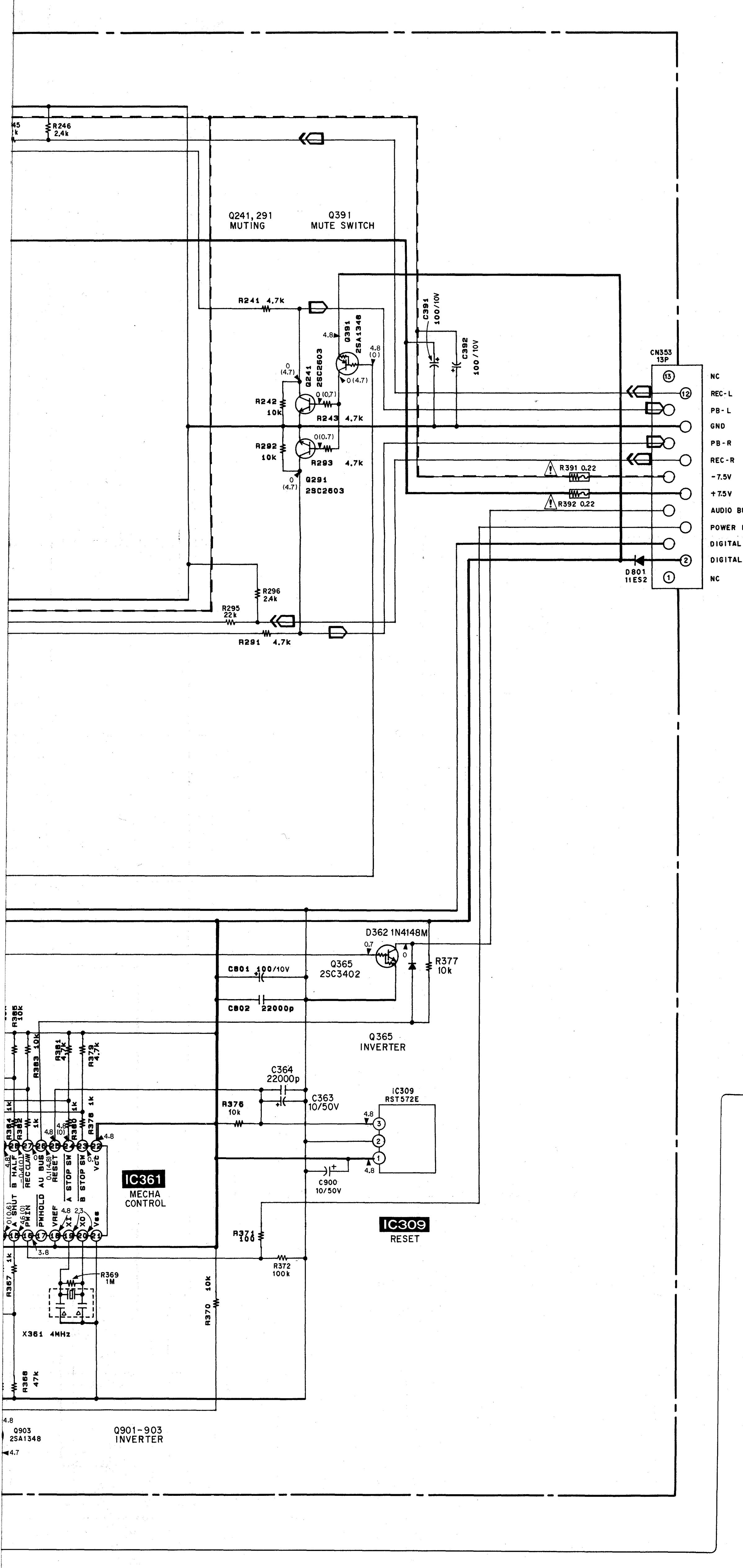
11
12
13
14
15
16
17
18
IC304
REC EQ AMP/
DOLBY NR
IC304
HA12172NT
REC LEVEL (L)
REC LEVEL (R)
AGND
MSGND
MSVcc
DGND
Vcc
A120/70
PASS/DOL
NORM/HIGH
B120/70
ME ON/OFF
BIAS ON/OFF
RH ON/OFF
NR ON/OFF
MSD R/S
REC/PB
LH ON/OFF
IREF
SPCAL
RECCAL
C312 100/10v
R245 22k
R246 2.4k
Q241, 291
MUTING
Q391
MUTE SWITCH
R241 4.7k
Q391 2SA1348
Q241 2SC2603
Q291 2SC2603
R242 10k
R243 4.7k
R292 10k
R293 4.7k
R295 22k
R296 2.4k
R291 4.7k
C391 100/10V
C392 100/10V
CN353 13P
NC
REC
PB
GND
PB
REC
-7.5
+7.5
AUD
POW
DIG
DIG
NC
R391 0.22
R392 0.22
D801 11ES2
D362 1N4148M
Q365 2SC3402
R377 10k
C801 100/10V
C802 22000p
Q365
INVERTER
C364 22000p
C363 10/50V
IC309 RST572E
IC309
RESET
C900 10/50V
R376 10k
R371 100
R372 100k
R370 10k
R801 10k
IC361
MECHA
CONTROL
IC361 M37471M4 -220SP
Q361
BUFFER
Q361 2SC3402
R362 10k
R358 4.7k
C393 100 10V
C394 100 10V
Q354
CAPSTAN
SWITCH
Q354 2SA1348
R803 4.7k
R802 4.7k
R361 10k
R399 10
TEST
BIAS
SPEED H/L
B REC
DUB H
DUB N
A PLAY
B PLAY
B PAUSE
KEY Y
KEY X
PWSW
B SHUT
A SHUT
PWIN
PWHOLD
VREF
XI
XO
Vss
ER CHECK
LH
RH
R/P
RELAY
PB A/B
INH
AU BUS OUT
A TRG
B TRG
TRG H/L
CAPM
CAPH/L
A HALF
B HALF
REC CLAW
AU BUS
RESET
A STOP SW
B STOP SW
Vcc
X361 4MHz
R369 1M
Q901 2SA1348
Q902 2SA1348
Q903 2SA1348
Q901-903
INVERTER
TP1
TP2
CN361 11P
CN354 3P
MOTOR GND
-7.5V
+7.5V
POWER BOARD CN31
(See Page 55)

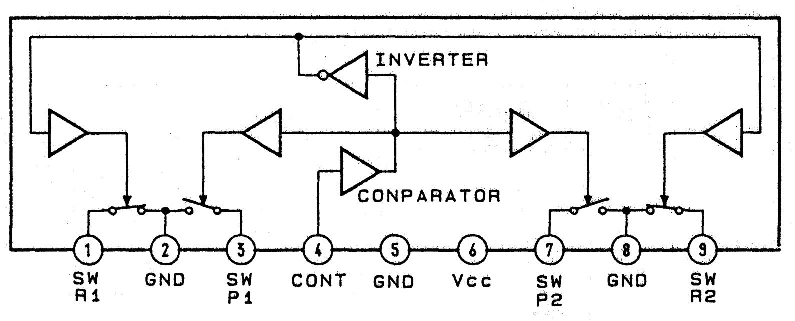

R246 2.4k
Q241, 291 MUTING
Q391 MUTE SWITCH
R241 4.7k
Q391 2SA1348
Q241 2SC2603
R242 10k
R243 4.7k
R292 10k
R293 4.7k
Q291 2SC2603
C391 100/10V
C392 100/10V
R391 0.22
R392 0.22
D801 11ES2
CN353 13P
NC
REC-L
PB-L
GND
PB-R
REC-R
-7.5V
+7.5V
AUDIO BUS
POWER IN
DIGITAL GND
DIGITAL +5.6V
NC
R296 2.4k
R295 22k
R291 4.7k
D362 1N4148M
Q365 2SC3402
R377 10k
C801 100/10V
C802 22000p
Q365 INVERTER
C364 22000p
C363 10/50V
R376 10k
IC309 RST572E
C900 10/50V
IC309 RESET
IC361 MECHA CONTROL
A SHUT
B HALF
PWIN
REC CLAW
PWHOLD
AU BUS
VREF
RESET
XI
A STOP SW
XO
B STOP SW
Vss
Vcc
R385 10k
R383 10k
R381 4.7k
R379 4.7k
R384
R382
R380
R378 1k
R371 100
R372 100k
R367 1k
R369 1M
X361 4MHz
R370 10k
R368 47k
Q903 2SA1348
Q901-903 INVERTER

POWER BOARD CN911

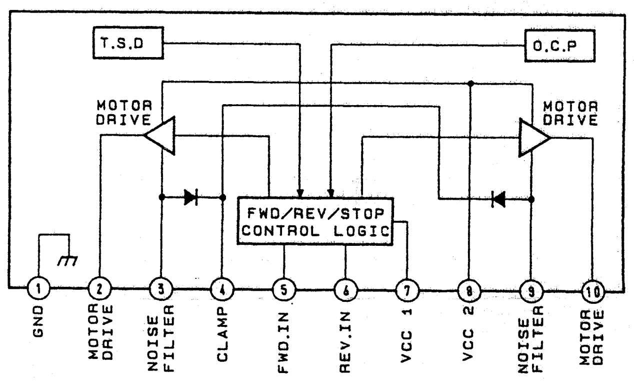
(See Page 55)

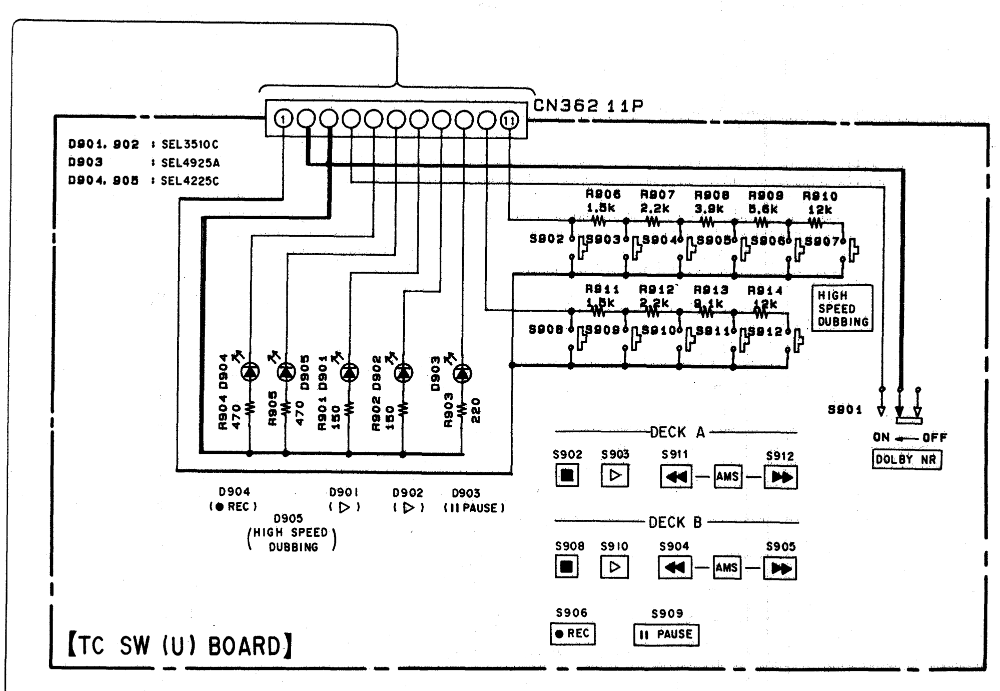
• IC BLOCK DIAGRAMS

IC303 uPC1330HA-NA


INVERTER
CONPARATOR
SW R1
GND
SW P1
CONT
GND
Vcc
SW P2
GND
SW R2

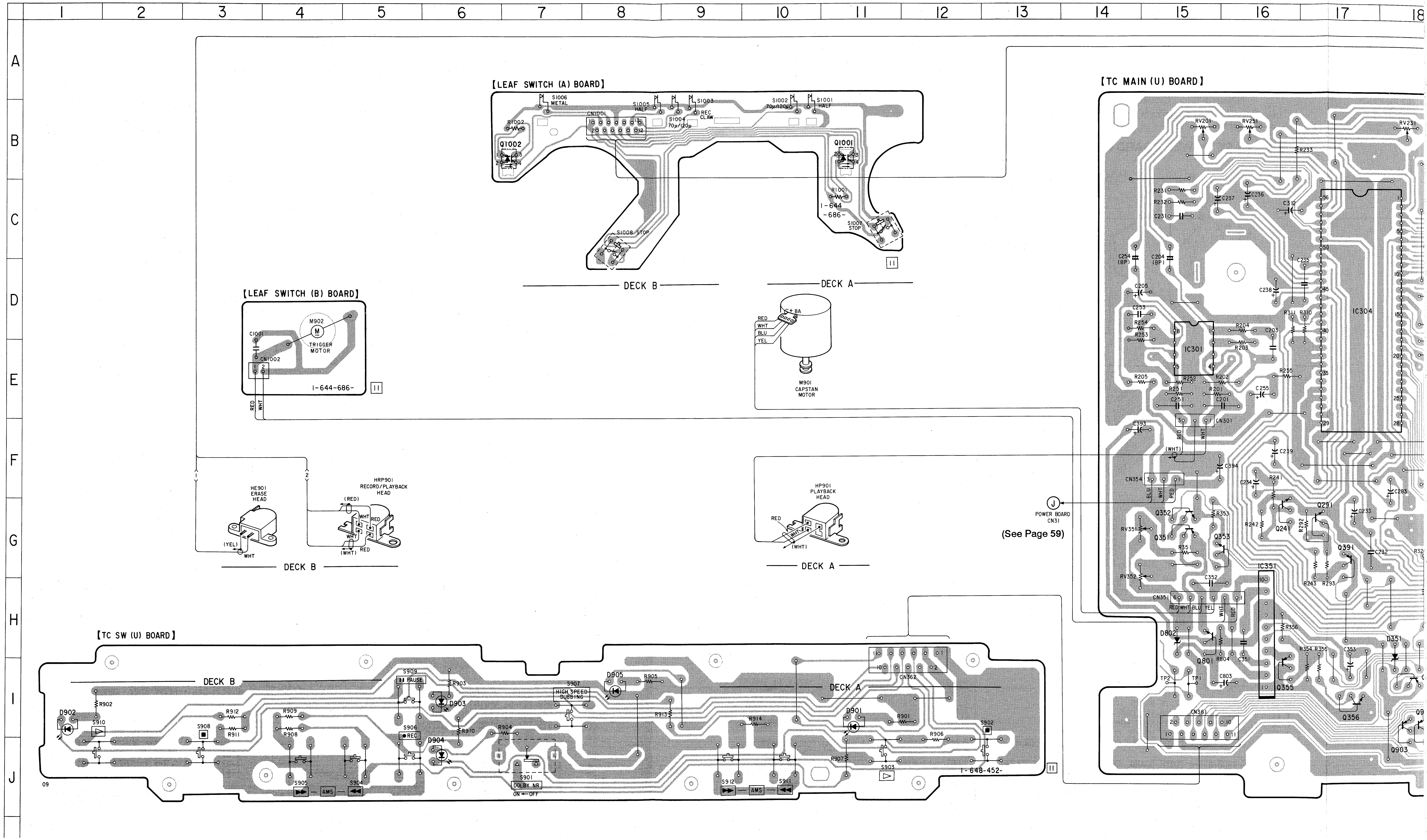
IC351 LB1641


T.S.D
O.C.P
MOTOR DRIVE
MOTOR DRIVE
FWD/REV/STOP CONTROL LOGIC
GND
MOTOR DRIVE
NOISE FILTER
CLAMP
FWD.IN
REV.IN
VCC 1
VCC 2
NOISE FILTER
MOTOR DRIVE


CN362 11P
D901, 902 : SEL3510C
D903 : SEL4925A
D904, 905 : SEL4225C
R906 1.5k
R907 2.2k
R908 3.9k
R909 5.6k
R910 12k
S902 S903 S904 S905 S906 S907
R911 1.5k
R912 2.2k
R913 8.1k
R914 12k
HIGH SPEED DUBBING
S908 S909 S910 S911 S912
R904 470 D904
R905 470 D905
R901 150 D901
R902 150 D902
R903 220 D903
S801
ON ← OFF
DOLBY NR
D904 (● REC)
D905 (HIGH SPEED DUBBING)
D901 (▷)
D902 (▷)
D903 (II PAUSE)
DECK A
S902 S903 S911 S912
AMS
DECK B
S908 S910 S904 S905
S906 ● REC
S909 II PAUSE
[TC SW (U) BOARD]

7-17. PRINTED WIRING BOARD

- **DECK SECTION (HCD-C50U)**
- **See page 32 for Circuit Boards Location and see page 97, 98 for Semiconductor Lead Layouts.**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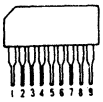
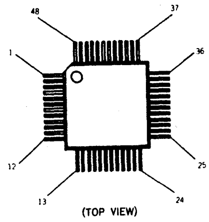
14
15
16
17
A
B
C
D
E
F
G
H
I
J
【LEAF SWITCH (A) BOARD】
S1006 METAL
S1005 HALF
S1003
S1004 70μ/120μ
REC CLAW
S1002 70μ/120μ
S1001 HALF
R1002
CN1001
Q1002
Q1001
R1001
1-644-686-
S1007 STOP
S1008 STOP
DECK B
DECK A
【LEAF SWITCH (B) BOARD】
M902
TRIGGER MOTOR
C1001
CN1002
1-644-686-
11
RED
WHT
BLU
YEL
BA
M901 CAPSTAN MOTOR
HE901 ERASE HEAD
HRP901 RECORD/PLAYBACK HEAD
HP901 PLAYBACK HEAD
(YEL)
(WHT)
(RED)
【TC MAIN (U) BOARD】
RV201
RV251
RV231
R233
R231
R232
C231
C237
C236
C312
C254 (BP)
C204 (BP)
C235
C205
C238
C253
R254
R253
R311
R310
IC304
IC301
R204
R203
C203
R205
R252
R251
C251
R202
R201
C201
R255
C255
CN301
C393
C239
C394
CN354
C234
R241
C283
Q352
R353
Q291
C233
RV351
Q351
R242
R292
Q241
Q353
R351
Q391
C232
RV352
C352
IC351
R243
R293
CN351
D802
R356
Q801
R804
C351
R354
R355
C353
D351
TP2
TP1
C803
Q355
CN361
Q356
Q903
POWER BOARD CN31
(See Page 59)
【TC SW (U) BOARD】
D902
R902
S910
S908
R912
R911
R909
R908
S909 II PAUSE
R903
D903
S906 ● REC
D904
R910
S907 HIGH SPEED DUBBING
D905
R905
R904
S901 DOLBY NR ON ← OFF
R913
CN362
R914
D901
R901
R906
S902
R907
S903
S905
AMS
S904
S912
S911
1-648-452-
09

7-18. SEMICONDUCTOR LEAD LAYOUTS

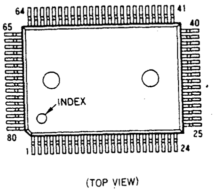
BA6418N
uPC1330HA-NA



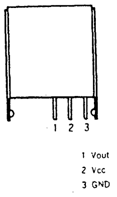
CXA1372AQ


48
37
1
36
12
25
13
24
(TOP VIEW)

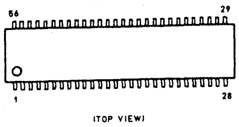
CXD2500BQ
uPD75516GF-461-3B9
uPD75517-GF-209-3B9
uPD78042-GF-033-3B9


64
41
65
40
INDEX
80
25
1
24
(TOP VIEW)

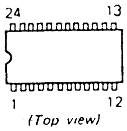
GP1U90XB


1 2 3
1 Vout
2 Vcc
3 GND

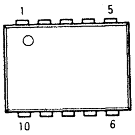
HA12171NT
HA12172NT


56
29
1
28
(TOP VIEW)

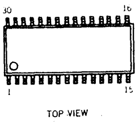
LA1831
LC7218


24
13
1
12
(Top view)

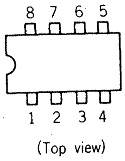
LA5601



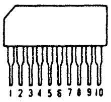
LA6532M


30
16
1
15
TOP VIEW

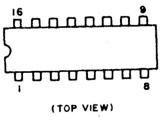
LB1639
M5218AP
uPC4570C-1


8 7 6 5
1 2 3 4
(Top view)

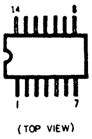
LB1641


1 2 3 4 5 6 7 8 9 10

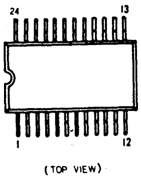
MC14052BCP
M50253P
M66312P
TC9184P


16
9
1
8
(TOP VIEW)

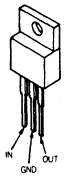
MC14066BF
MC14093BF


14
8
1
7
(TOP VIEW)

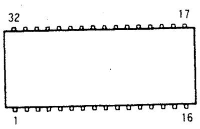
MSM6538-01GS-VKR1


24
13
1
12
(TOP VIEW)

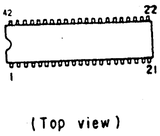
M5F78M05L
M5F78M07L



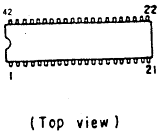
M5218AFP



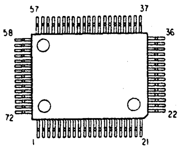
M5218AL
M5230L-A


42
22
1
21
(Top view)

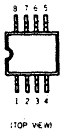
M37471M4-220SP


42
22
1
21
(Top view)

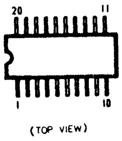
M50964-260FP


57
37
58
36
72
22
1
21

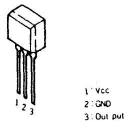
M51935BFP
uPC4570G2


8 7 6 5
1 2 3 4
(TOP VIEW)

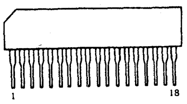
PCM-67U-B


20
11
1
10
(TOP VIEW)

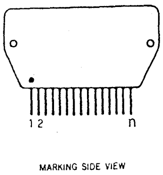
PST572E


1 2 3
1 : Vcc
2 : GND
3 : Out put

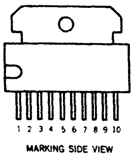
RBA-402



STK-4132MK2
STK-4142MK2


1 2
n
MARKING SIDE VIEW

TA7272P


1 2 3 4 5 6 7 8 9 10
MARKING SIDE VIEW

uPD4066BC

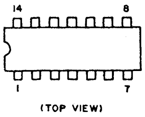
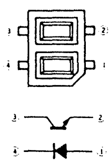
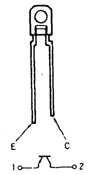

14
8
1
7
(TOP VIEW)

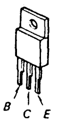
PHOTO REFLECTOR
NJL5165K-A
PHONT REFLECTOR
NJL5165K-B (H1)



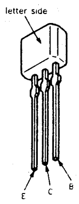
TPS626



2SA473
2SD2012



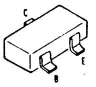
2SA1175-HFE
2SC2785-HFE
2SC3623A-LK
DTA124ES
DTC144ES


letter side
E
C
B

)R

)R

2SA1235-F
2SA1602-F
2SC4154-F
DTC144EK



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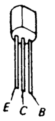
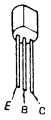
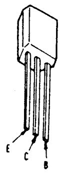
2SC3112-A
2SC945-P
2SD1387-3



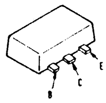
2SB1116-K



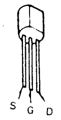
2SC2603-EF
2SC2724-CD
DTA114ES
DTA144ES
DTC114ES
DTC124ES



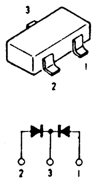
2SD1622-S



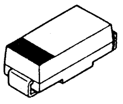
2SK246-GR3
2SK246-Y



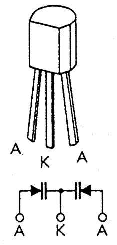
DCB010



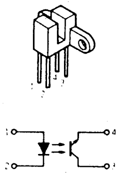
EC10DS2



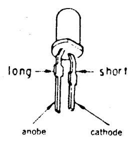
KV1560N



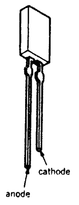
ON1023-S



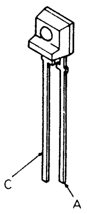
SEL2210S-C
SEL2210S-CD
SEL2410E-C-TP6
SEL3510C-CD


long
short
anode
cathode

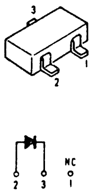
SEL4225C-C
SEL4925A-D


cathode
anode

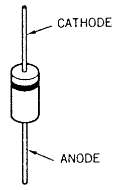
TLN117



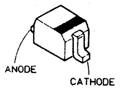
MA3068-L



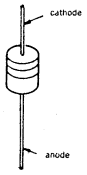
1N4148M
1S1585


CATHODE
ANODE

1SS352


ANODE
CATHODE

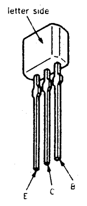
11ES2
HZS30-2L
HZS6A1L
HZS9A2L
UZL-6L3
UZL-12M1
UZP-5.6B


cathode
anode

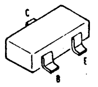
)R

)R

2SA1175-HFE
2SC2785-HFE
2SC3623A-LK
DTA124ES
DTC144ES


letter side
E
C
B

2SA1235-F
2SA1602-F
2SC4154-F
DTC144EK



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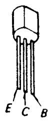
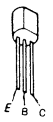
2SC945-P
2SD1387-3



2SB1116-K



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2SC2724-CD
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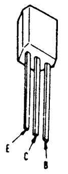
DTA144ES
DTC114ES
DTC124ES



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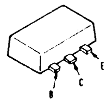
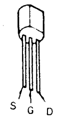
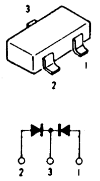


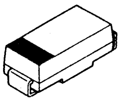
2SK246-GR3
2SK246-Y



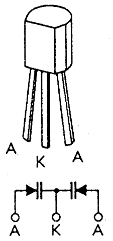
DCB010



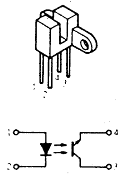
EC10DS2



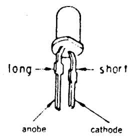
KV1560N



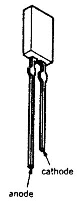
ON1023-S



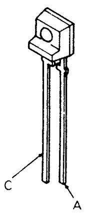
SEL2210S-C
SEL2210S-CD
SEL2410E-C-TP6
SEL3510C-CD


long
short
anode
cathode

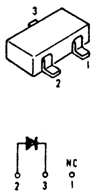
SEL4225C-C
SEL4925A-D


cathode
anode

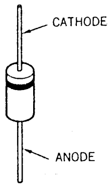
TLN117



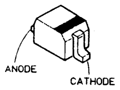
MA3068-L



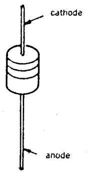
1N4148M
1S1585


CATHODE
ANODE

1SS352


ANODE
CATHODE

11ES2
HZS30-2L
HZS6A1L
HZS9A2L
UZL-6L3
UZL-12M1
UZP-5.6B


cathode
anode

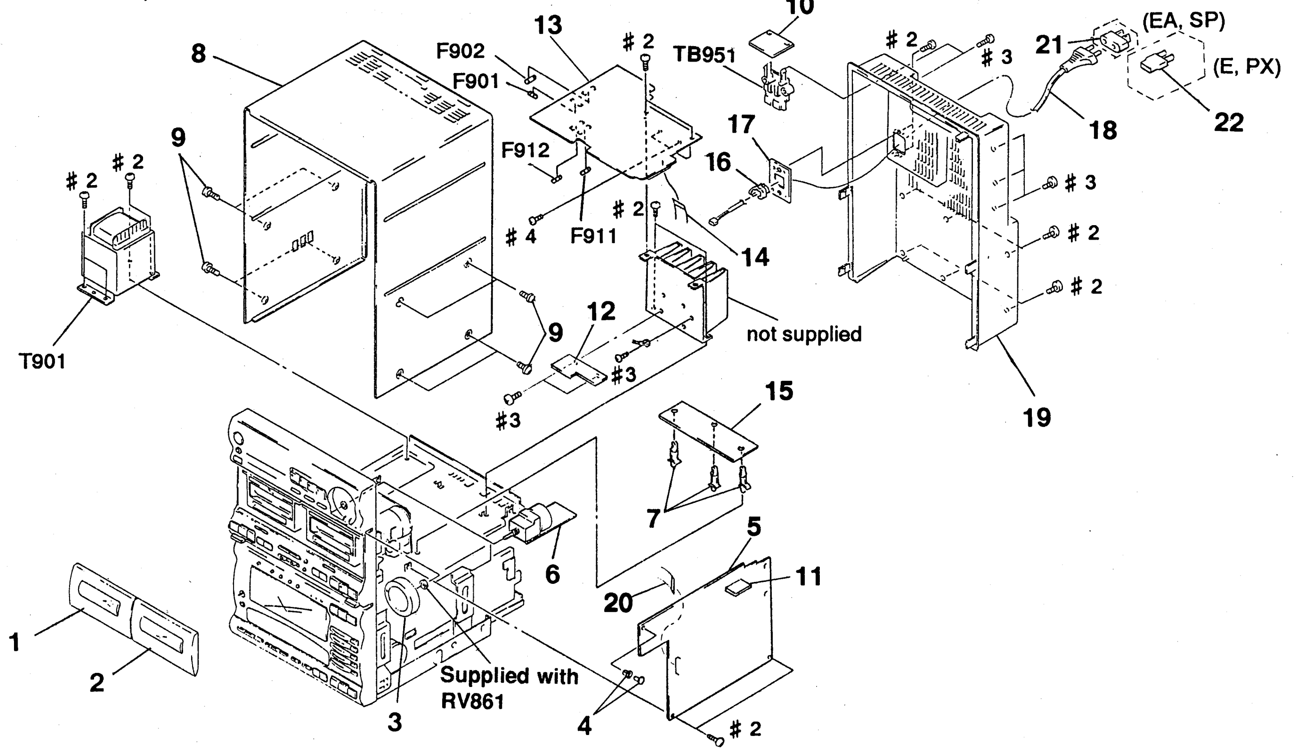
SECTION 8
EXPLODED VIEWS

NOTE:
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts color Cabinet's color
- Hardware (# mark) list is given in the last of this parts list.
- Items marked " ∗ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- CND : Canadian model
- G : German model
- IT : Italian model
- EE : East European model
- EA : Saudi Arabia model
- AUS : Australian model
- SP : Singapore model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

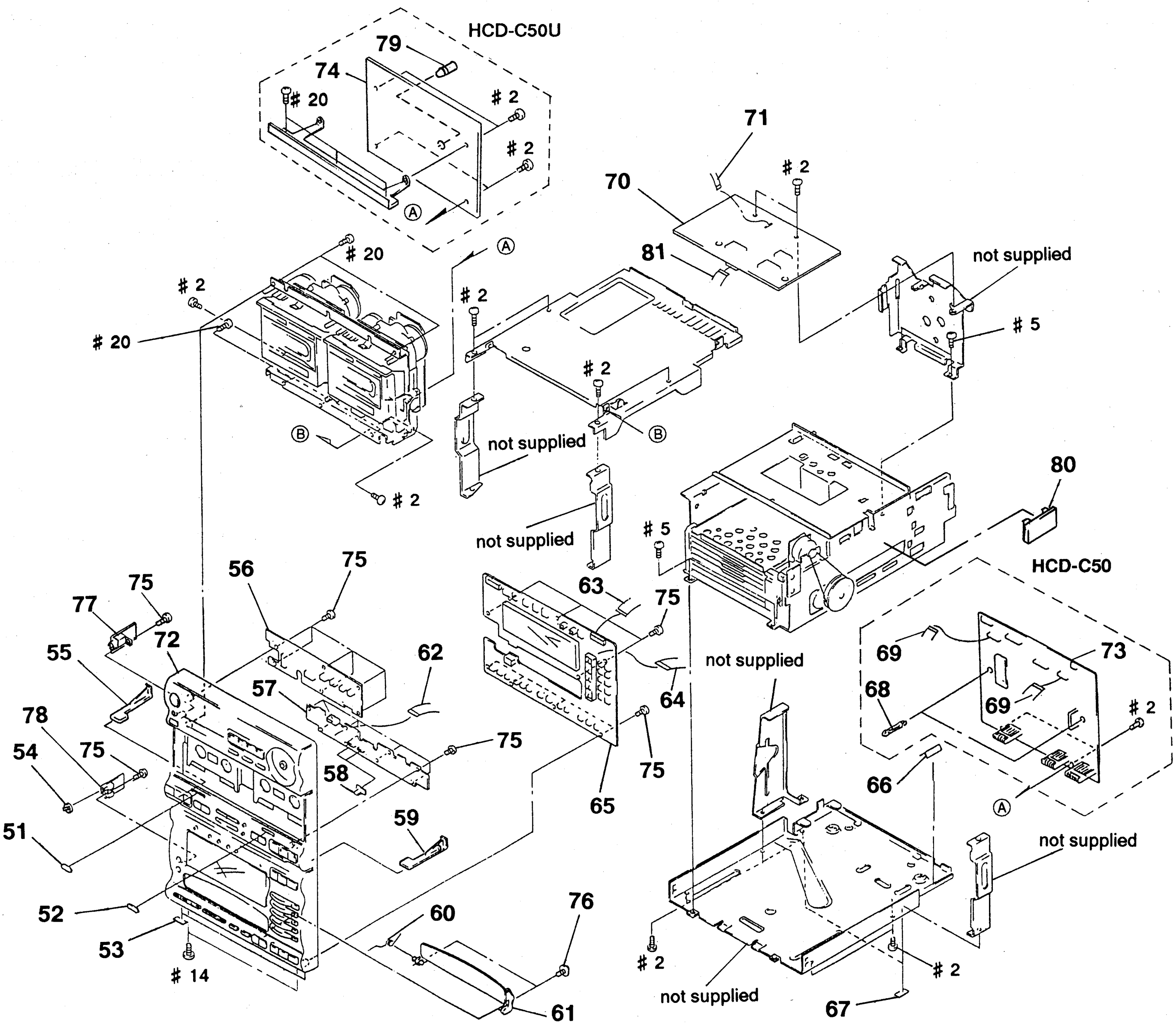
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

8-1. CASE, POWER BOARD SECTION



Ref. No.	Part No.	Description	Remark
1	X-4943-772-1	LID (L) ASSY, CASSETTE (C50U)	
1	X-4943-803-1	LID (L) ASSY, CASSETTE (C50)	
2	X-4943-773-1	LID (R) ASSY, CASSETTE (C50U)	
2	X-4943-802-1	LID (R) ASSY, CASSETTE (C50)	
3	X-4943-774-1	KNOB (VOLUME) ASSY	
4	4-812-134-00	RIVET NYLON, 3.5	
∗ 5	A-4360-827-A	MAIN BOARD, COMPLETE (C50:CND/C50U)	
∗ 5	A-4360-960-A	MAIN BOARD, COMPLETE (C50:IT, G)	
∗ 5	A-4360-964-A	MAIN BOARD, COMPLETE (C50:AEP, UK)	
∗ 5	A-4360-976-A	MAIN BOARD, COMPLETE (C50:E, EA, AUS, SP, PX)	
∗ 5	A-4365-148-A	MAIN BOARD, COMPLETE (C50:EE)	
∗ 6	1-648-412-11	VR BOARD	
∗ 7	4-954-051-51	HOLDER, PC BOARD	
∗ 8	4-959-242-01	CASE	
9	3-363-099-01	SCREW (CASE 3 TP2)	
∗ 10	1-648-413-11	ST. TM BOARD	
∗ 11	1-648-414-11	SW BOARD (C50:AEP, UK, IT, G, EE)	
∗ 12	1-648-807-11	TRANSISTOR BOARD	
∗ 13	A-4360-826-A	POWER BOARD, COMPLETE (C50U)	
∗ 13	A-4360-963-A	POWER BOARD, COMPLETE (C50:AEP, UK, IT, G, EE)	
∗ 13	A-4360-975-A	POWER BOARD, COMPLETE (C50:E, EA, SP, PX)	
∗ 13	A-4360-979-A	POWER BOARD, COMPLETE (C50:CND)	
∗ 13	A-4365-709-A	POWER BOARD, COMPLETE (C50:AUS)	
14	1-534-517-00	WIRE (FLAT TYPE) (13 CORE) (C50U)	
14	1-690-590-31	WIRE, FLAT TYPE (13 CORE) (C50)	
∗ 15	1-648-763-11	KARAOKE RELAY BOARD	
∗ 16	3-703-244-00	BUSHING (2104), CORD (C50:CND, AEP, UK, IT, G, EE, EA, AUS, SP/C50U)	
∗ 16	3-703-571-11	BUSHING (S) (4516), CORD (C50:E, PX)	
∗ 17	4-959-236-01	BRACKET (C-H)	
⚠18	1-574-902-11	CORD, POWER (C50:E, PX)	
⚠18	1-590-083-11	CORD, POWER (C50:AUS)	
⚠18	1-696-169-11	CORD, POWER (AEP) (C50:AEP, IT, G, EE, EA, SP)	
⚠18	1-696-570-21	CORD, POWER (C50:UK)	
⚠18	1-751-586-11	CORD, POWER (C50:CND/C50U)	
∗ 19	4-959-239-01	PANEL, BACK (C50:CND/C50U)	
∗ 19	4-959-239-11	PANEL, BACK (C50:AEP, UK, IT, G, EE, AUS)	
∗ 19	4-959-239-21	PANEL, BACK (C50:E, EA, SP, PX)	
20	1-696-804-21	WIRE (FLAT TYPE) (19 CORE)	
⚠21	1-569-008-11	ADAPTER, CONVERSION 2P (C50:EA, SP)	
⚠22	1-569-007-11	ADAPTER, CONVERSION 2P (C50:E, PX)	
⚠F901	1-532-078-00	FUSE (T1A) (C50:E, EA, AUS, SP, PX)	
⚠F901	1-532-215-00	FUSE (T800mA) (C50:AEP, UK, IT, G, EE)	
⚠F901	1-576-103-11	FUSE (1.6A) (C50:CND/C50U)	
⚠F902	1-532-279-00	FUSE (T500mA) (C50:E, EA, SP, PX)	
⚠F911	1-532-203-00	FUSE (T2A) (C50:EXCEPT CND)	
⚠F911	1-576-104-11	FUSE (2A) (C50:CND/C50U)	
⚠F912	1-532-203-00	FUSE (T2A) (C50:EXCEPT CND)	
⚠F912	1-576-104-11	FUSE (2A) (C50:CND/C50U)	
⚠T901	1-423-710-11	TRANSFORMER, POWER (C50U)	
⚠T901	1-423-711-11	TRANSFORMER, POWER (C50:AEP, IT, G, EE)	
⚠T901	1-423-712-11	TRANSFORMER, POWER (C50:UK)	
⚠T901	1-423-713-11	TRANSFORMER, POWER (C50:E, EA, AUS, PX)	
⚠T901	1-423-752-11	TRANSFORMER, POWER (C50:SP)	
⚠T901	1-423-753-11	TRANSFORMER, POWER (C50:CND)	
∗ TB951	1-537-240-21	TERMINAL BOARD (CHECKER PIN) (SPEAKER)	

8-2. FRONT PANEL, PC BOARD SECTION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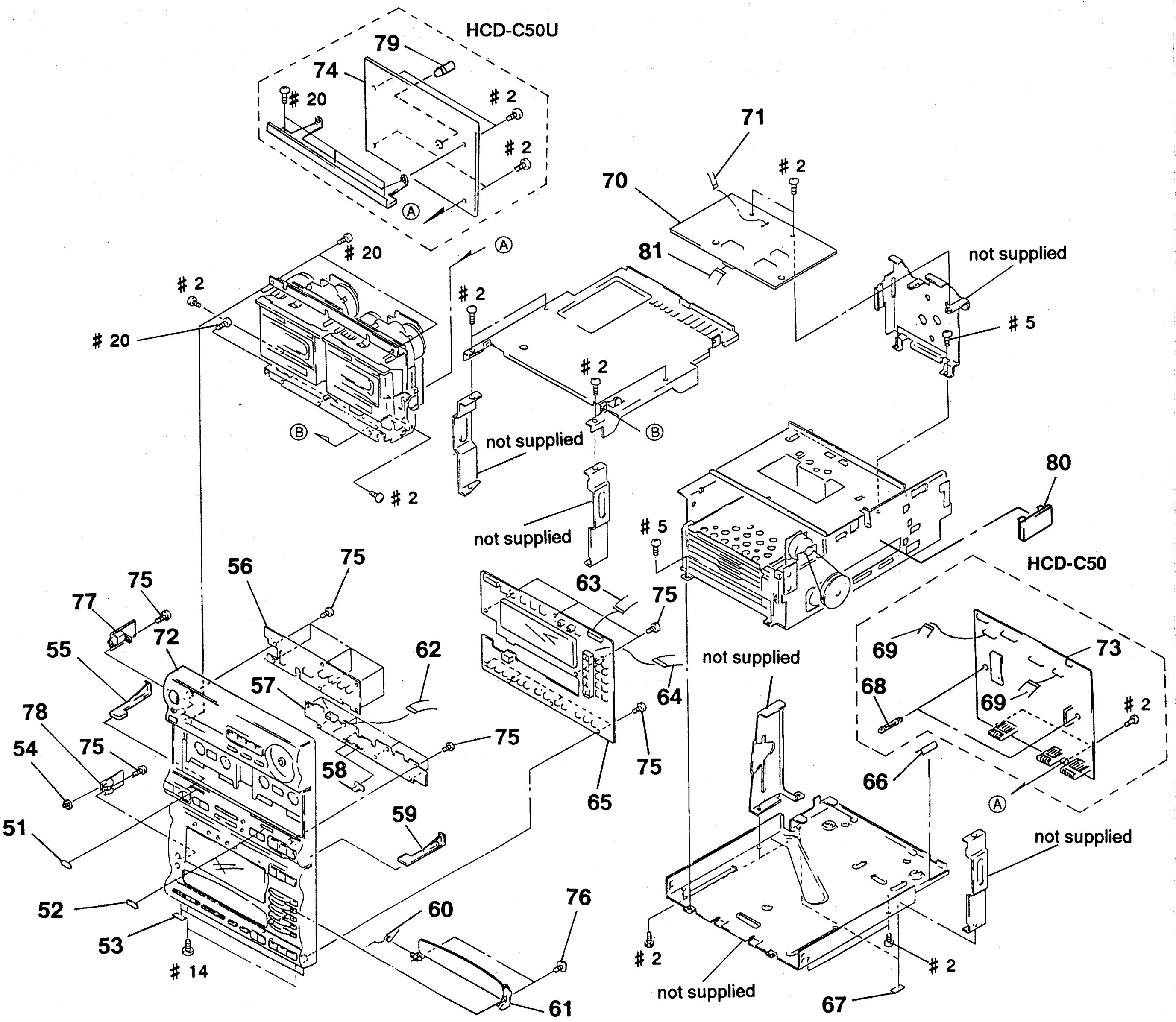
# 5
# 2
Ⓑ
not supplied
Ⓑ
# 2
80
not supplied
# 5
HCD-C50
56
75
63
75
75
77
72
62
not supplied
69
73
55
57
68
64
69
# 2
78
75
75
54
58
75
66
65
51
59
Ⓐ
not supplied
76
52
60
53
# 14
# 2
# 2
not supplied
67
61

Ref. No.	Part No.	Description	Remark
51	4-959-222-01	LID (AZIMUTH L)(C50)	
52	4-959-221-01	LID (AZIMUTH R)(C50)	
53	4-930-336-11	FOOT (FELT)	
54	4-932-882-11	KNOB (HP. VOL)(C50:EXCEPT CND)	
55	4-959-210-01	BUTTON (EJECT-L)	
* 56	A-4360-951-A	FUNC BOARD, COMPLETE (C50U)	
* 56	A-4360-974-A	FUNC BOARD, COMPLETE (C50)	
* 57	A-4360-950-A	TC. SW BOARD, COMPLETE (C50U)	
* 57	A-4360-973-A	TC. SW BOARD, COMPLETE (C50)	
58	4-959-223-01	KNOB	
59	4-959-288-01	BUTTON (EJECT-R)	
60	4-959-207-01	SPRING (CLOSE)	
61	4-959-206-01	LID (LOADING)	
62	1-575-784-11	WIRE (FLAT TYPE)(11 CORE)(C50U)	
62	1-690-065-11	WIRE, FLAT TYPE (15 CORE)(C50)	
63	1-690-319-11	WIRE, FLAT TYPE (11 CORE)	
64	1-575-906-11	WIRE, FLAT TYPE (15 CORE)	
* 65	A-4360-946-A	DISPLAY BOARD, COMPLETE (C50:CND/C50U)	
* 65	A-4360-962-A	DISPLAY BOARD, COMPLETE (C50:G)	
* 65	A-4360-971-A	DISPLAY BOARD, COMPLETE (C50:AEP, UK)	
* 65	A-4360-978-A	DISPLAY BOARD, COMPLETE (C50:E, EA, AUS, SP, PX)	
* 65	A-4365-147-A	DISPLAY BOARD, COMPLETE (C50:IT)	
* 65	A-4365-149-A	DISPLAY BOARD, COMPLETE (C50:EE)	
66	3-831-441-XX	CUSHION (B), CABINET	
67	4-930-336-21	FOOT (FELT)(C50:UK, IT, EE, EA, AUS, SP)	
67	4-930-336-31	FOOT (FELT) (C50:CND, AEP, G, E, PX/C50U)	
* 68	3-349-025-41	HOLDER, PC BOARD (C50:EXCEPT CND/C50U)	
* 68	3-350-847-41	HOLDER, PCB (C50:CND)	
69	1-696-725-11	WIRE (FLAT TYPE)(9 CORE)(C50)	
* 70	A-4360-947-A	CD. MAIN BOARD, COMPLETE	
71	1-590-209-11	WIRE (FLAT TYPE)(7 CORE)	
72	X-4943-768-1	PANEL ASSY, FRONT (C50U)	
72	X-4943-769-1	PANEL ASSY, FRONT (C50:CND)	
72	X-4943-770-1	PANEL ASSY, FRONT (C50:AEP, UK, IT, G, EE)	
72	X-4943-771-1	PANEL ASSY, FRONT (C50:E, EA, AUS, SP, PX)	
* 73	A-4360-972-A	TC. MAIN BOARD, COMPLETE (C50)	
* 74	A-4360-949-A	TC. MAIN BOARD, COMPLETE (C50U)	
75	4-951-620-01	SCREW (2.6X8), +BVTP	
76	4-933-134-01	SCREW (+PTPWH M2.6X6)	
* 77	1-648-416-11	HP BOARD	
* 78	1-648-415-11	MIC BOARD (C50:EXCEPT CND)	
79	4-962-265-01	HOLDER, PC BOARD (EXCEPT PX/C50U)	
80	4-962-178-01	HOLDER (FLEXIBLE)	
81	1-696-727-11	WIRE (FLAT TYPE)(15 CORE)	

8-2. FRONT PANEL, PC BOARD SECTION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# 20
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Ⓐ
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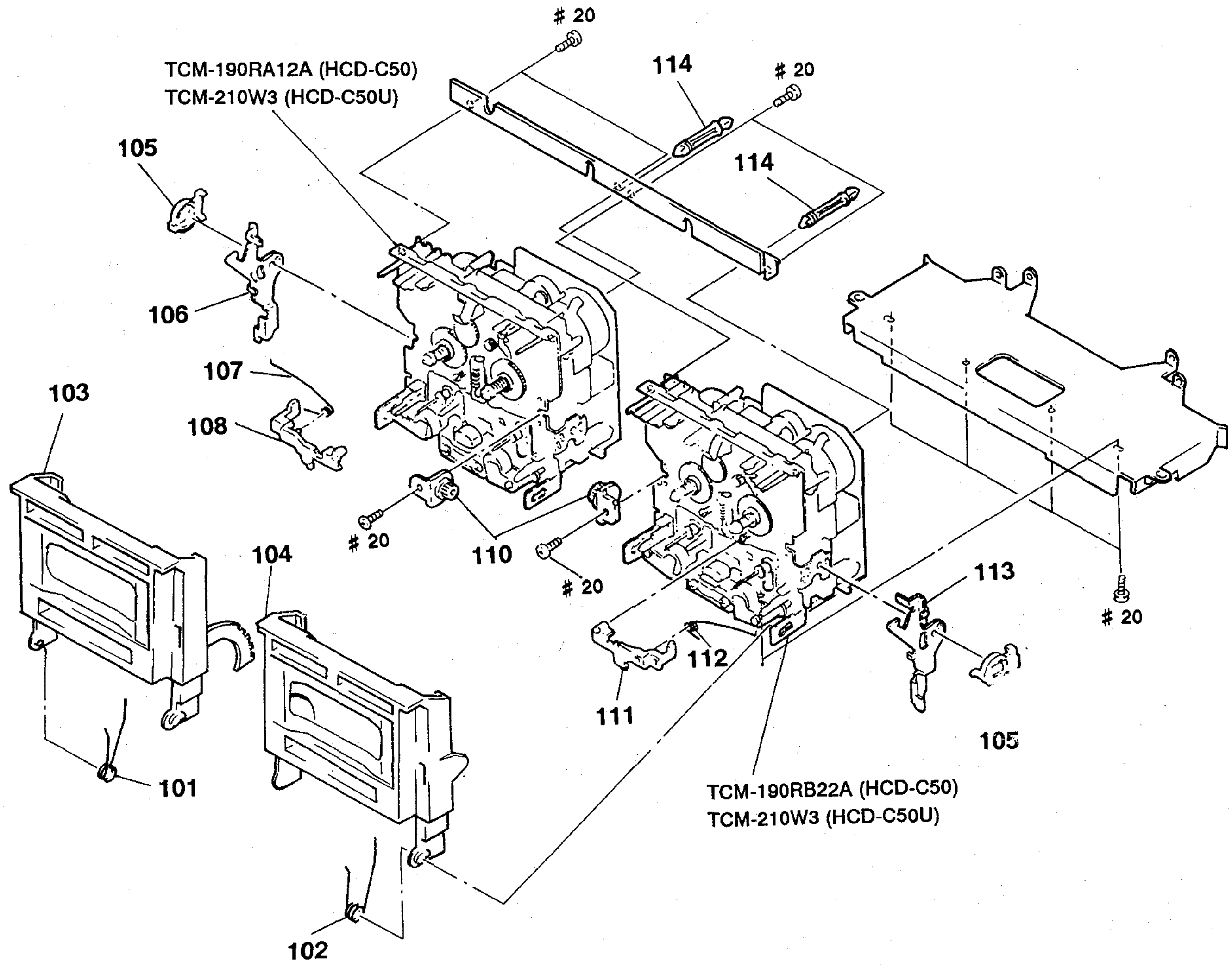
# 20
# 2
not supplied
# 5
# 2
Ⓑ
not supplied
Ⓑ
# 2
80
not supplied
# 5
HCD-C50
75
56
75
63
75
77
72
62
not supplied
69
73
55
57
64
68
78
75
69
# 2
54
75
58
75
66
65
Ⓐ
51
59
not supplied
76
52
60
53
# 14
61
# 2
# 2
not supplied
67

Ref. No.	Part No.	Description	Remark
51	4-959-222-01	LID (AZIMUTH L)(C50)	
52	4-959-221-01	LID (AZIMUTH R)(C50)	
53	4-930-336-11	FOOT (FELT)	
54	4-932-882-11	KNOB (HP. VOL)(C50:EXCEPT CND)	
55	4-959-210-01	BUTTON (EJECT-L)	
* 56	A-4360-951-A	FUNC BOARD, COMPLETE (C50U)	
* 56	A-4360-974-A	FUNC BOARD, COMPLETE (C50)	
* 57	A-4360-950-A	TC.SW BOARD, COMPLETE (C50U)	
* 57	A-4360-973-A	TC.SW BOARD, COMPLETE (C50)	
58	4-959-223-01	KNOB	
59	4-959-288-01	BUTTON (EJECT-R)	
60	4-959-207-01	SPRING (CLOSE)	
61	4-959-206-01	LID (LOADING)	
62	1-575-784-11	WIRE (FLAT TYPE)(11 CORE)(C50U)	
62	1-690-065-11	WIRE, FLAT TYPE (15 CORE)(C50)	
63	1-690-319-11	WIRE, FLAT TYPE (11 CORE)	
64	1-575-906-11	WIRE, FLAT TYPE (15 CORE)	
* 65	A-4360-946-A	DISPLAY BOARD, COMPLETE (C50:CND/C50U)	
* 65	A-4360-962-A	DISPLAY BOARD, COMPLETE (C50:G)	
* 65	A-4360-971-A	DISPLAY BOARD, COMPLETE (C50:AEP, UK)	
* 65	A-4360-978-A	DISPLAY BOARD, COMPLETE (C50:E, EA, AUS, SP, PX)	
* 65	A-4365-147-A	DISPLAY BOARD, COMPLETE (C50:IT)	
* 65	A-4365-149-A	DISPLAY BOARD, COMPLETE (C50:EE)	
66	3-831-441-XX	CUSHION (B), CABINET	
67	4-930-336-21	FOOT (FELT)(C50:UK, IT, EE, EA, AUS, SP)	
67	4-930-336-31	FOOT (FELT) (C50:CND, AEP, G, E, PX/C50U)	
* 68	3-349-025-41	HOLDER, PC BOARD (C50:EXCEPT CND/C50U)	
* 68	3-350-847-41	HOLDER, PCB (C50:CND)	
69	1-696-725-11	WIRE (FLAT TYPE)(9 CORE)(C50)	
* 70	A-4360-947-A	CD.MAIN BOARD, COMPLETE	
71	1-590-209-11	WIRE (FLAT TYPE)(7 CORE)	
72	X-4943-768-1	PANEL ASSY, FRONT (C50U)	
72	X-4943-769-1	PANEL ASSY, FRONT (C50:CND)	
72	X-4943-770-1	PANEL ASSY, FRONT (C50:AEP, UK, IT, G, EE)	
72	X-4943-771-1	PANEL ASSY, FRONT (C50:E, EA, AUS, SP, PX)	
* 73	A-4360-972-A	TC.MAIN BOARD, COMPLETE (C50)	
* 74	A-4360-949-A	TC.MAIN BOARD, COMPLETE (C50U)	
75	4-951-620-01	SCREW (2.6X8), +BVTP	
76	4-933-134-01	SCREW (+PTPWH M2.6X6)	
* 77	1-648-416-11	HP BOARD	
* 78	1-648-415-11	MIC BOARD (C50:EXCEPT CND)	
79	4-962-265-01	HOLDER, PC BOARD (EXCEPT PX/C50U)	
80	4-962-178-01	HOLDER (FLEXIBLE)	
81	1-696-727-11	WIRE (FLAT TYPE)(15 CORE)	

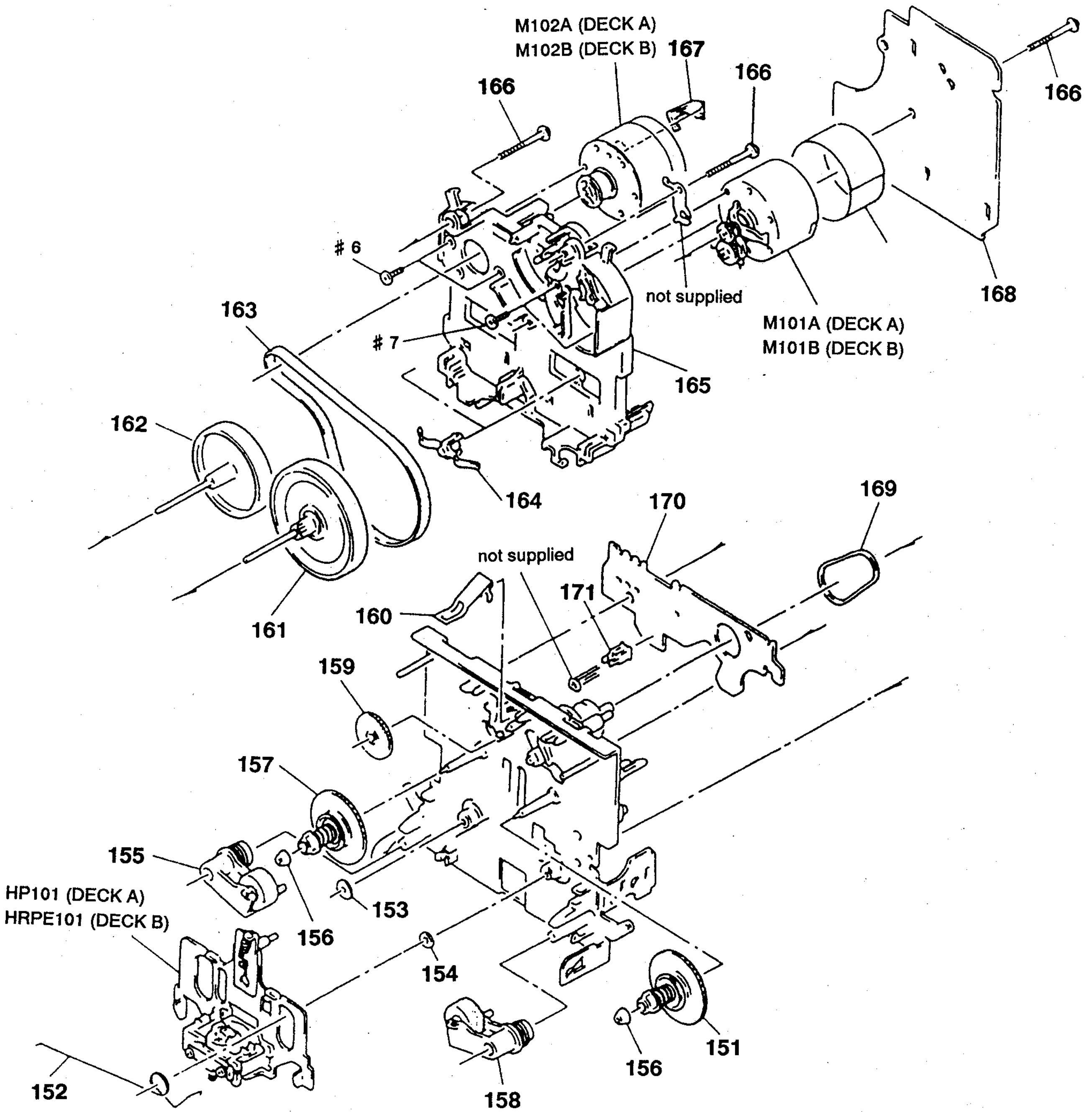
8-3. CASSETTE HOLDER SECTION



# 20
TCM-190RA12A (HCD-C50)
TCM-210W3 (HCD-C50U)
114
# 20
105
114
106
107
103
108
# 20
110
# 20
104
113
# 20
112
111
105
101
TCM-190RB22A (HCD-C50)
TCM-210W3 (HCD-C50U)
102

Ref. No.	Part No.	Description	Remark
101	4-959-231-01	SPRING (L), TORSION (C50)	
102	4-959-232-01	SPRING (R), TORSION (C50)	
103	X-4943-776-1	HOLDER (L) ASSY, CASSETTE (C50)	
104	X-4943-775-1	HOLDER (R) ASSY, CASSETTE (C50)	
105	3-354-957-01	JOINT (LOCK LEVER)	
* 106	3-367-709-01	LEVER (LOCK LEVER L)	
107	3-354-961-01	SPRING (EJ SAFTY SPRING L) (C50)	
108	3-354-955-01	LEVER (EJ SAFTY LEVER L) (C50)	
110	3-354-963-01	DAMPER (C50)	
111	3-354-956-01	LEVER (EJ SAFTY LEVER R) (C50)	
112	3-354-962-01	SPRING (EJ SAFTY SPRING R) (C50)	
* 113	3-367-710-01	LEVER (LOCK LEVER R)	
* 114	3-682-419-21	HOLDER, P.C.B (C50)	

8-4. MECHANISM DECK SECTION 1 (HCD-C50)
(DECK A: TCM-190RA12A/DECK B: TCM-190RB22A)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M102B (DECK B)
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166
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166
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not supplied
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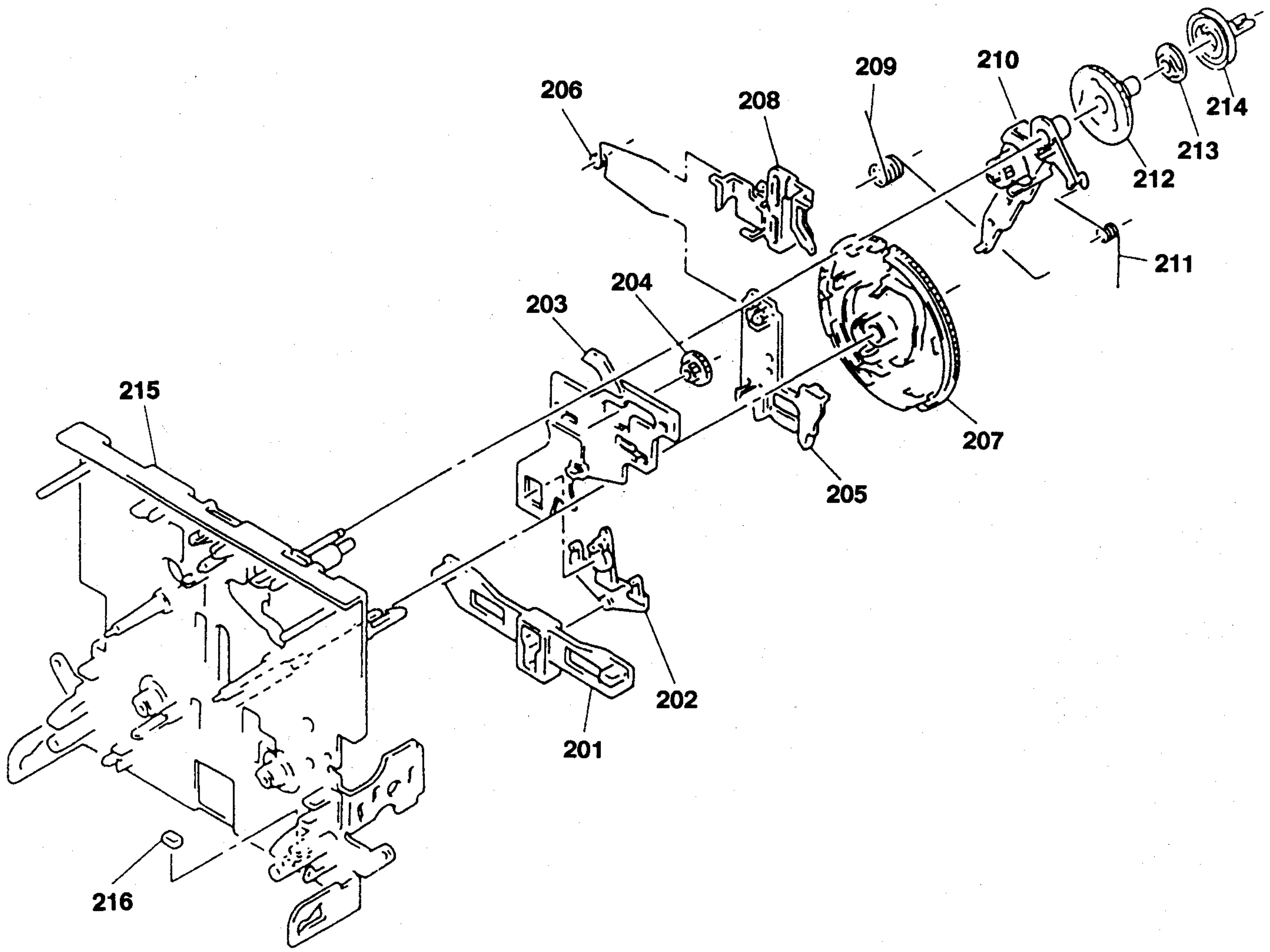
M101B (DECK B)
# 7
165
162
164
170
169
not supplied
171
160
161
159
157
155
HP101 (DECK A)
HRPE101 (DECK B)
153
156
154
151
156
152
158

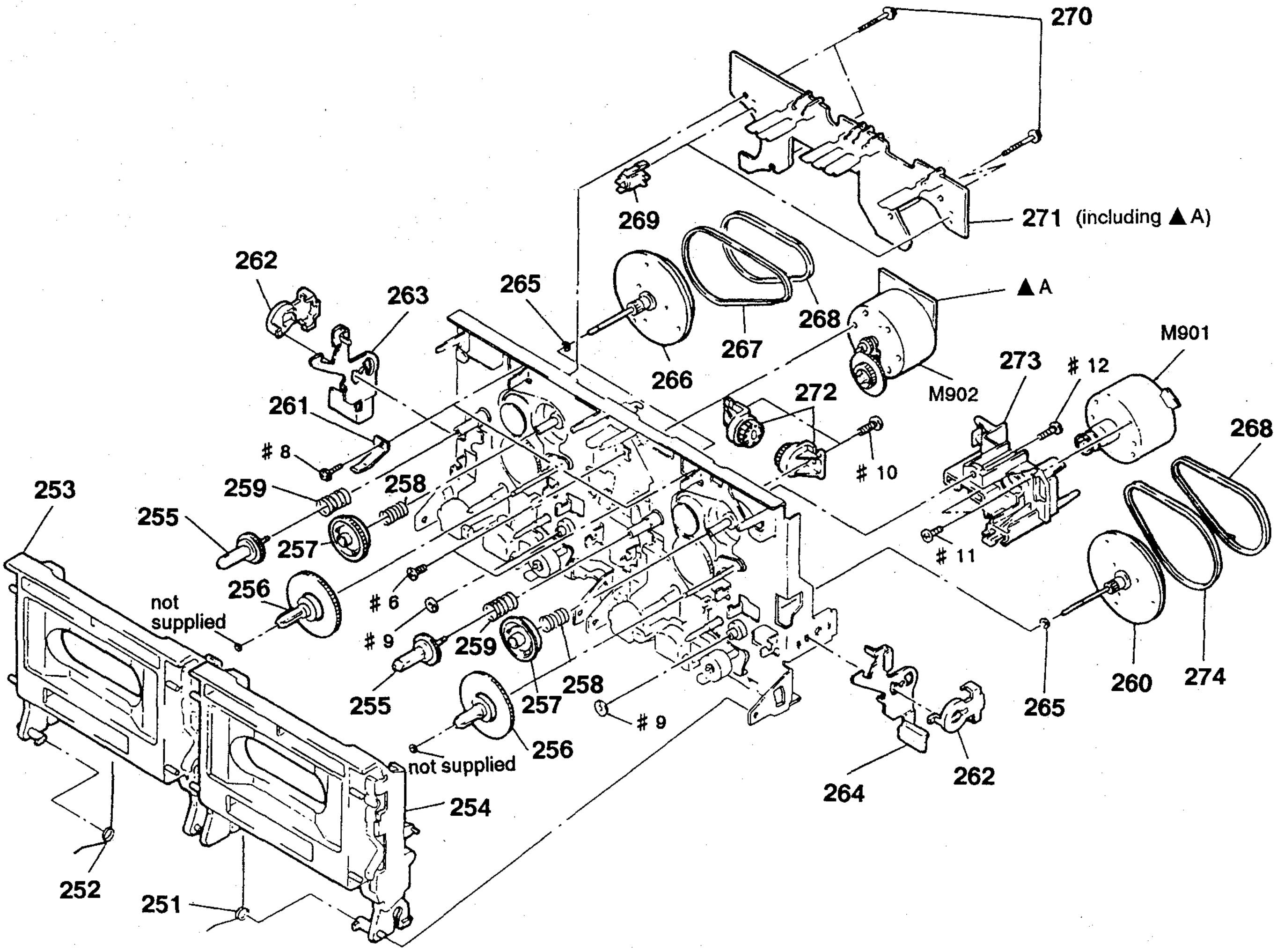
Ref. No.	Part No.	Description	Remark
151	X-3359-404-1	TABLE ASSY, REEL (C50)	
152	3-359-455-01	SPRING, TORSION (C50)	
153	3-356-714-01	WASHER (C50)	
154	3-356-713-01	WASHER (C50)	
155	X-3359-409-1	LEVER (PINCH LEVER REV) ASSY (C50)	
156	3-362-308-01	CAP (REEL) (C50)	
157	X-3362-078-1	TABLE ASSY (B), REEL (C50)	
158	X-3359-408-1	LEVER (PINCH LEVER FWD) ASSY (C50)	
159	3-359-424-01	GEAR (REV GEAR) (C50)	
160	3-359-430-01	SPRING (CASSETTE RETAINER), LEAF (C50)	
161	X-3359-406-1	FLYWHEEL (FWD) ASSY (C50)	
162	X-3359-410-1	FLYWHEEL (REV) ASSY (C50)	
163	3-359-417-01	BELT (FLAT), CAPSTAN (C50)	
164	3-575-321-00	RETAINER, THRUST, CAPSTAN (C50)	
* 165	3-359-436-01	BASE (THRUST RETAINER), FITTING (C50)	
166	3-359-414-01	SCREW (+PTPWH 2X23) (C50)	
167	1-638-983-11	MOTOR FLEXIBLE BOARD (C50)	
* 168	A-2006-399-A	MD-A BOARD, COMPLETE (C50)	
* 168	A-2006-400-A	MD-B BOARD, COMPLETE (C50)	
169	3-359-466-01	BELT (FR), SQUARE (C50)	
170	1-634-841-14	SW-A BOARD (RA12A) (C50)	
170	1-634-841-14	SW-B BOARD (RB22A) (C50)	
HP101	A-2003-837-F	DECK ASSY, HEAD (DECK A) (C50)	
HRPE101	A-2003-838-F	DECK ASSY, HEAD (DECK B) (C50)	
M101A	X-3363-501-1	MOTOR, REEL ASSY (DECK A) (C50)	
M101B	X-3363-501-1	MOTOR, REEL ASSY (DECK B) (C50)	
M102A	X-3365-377-1	MOTOR, CAPSTAN ASSY (DECK A) (C50)	
M102B	X-3365-377-1	MOTOR, CAPSTAN ASSY (DECK B) (C50)	

8-5. MECHANISM DECK SECTION 2 (HCD-C50)
(DECK A: TCM-190RA12A/DECK B: TCM-190RB22A)



Ref. No.	Part No.	Description	Remark
* 201	3-359-425-01	SLIDER (REVERSE SLIDER) (C50)	
202	3-359-426-01	LEVER (REVERSE LEVER) (C50)	
* 203	3-359-415-01	SLIDER (TRIGGER SLIDER) (C50)	
204	3-359-448-01	GEAR (TRIGGER) (C50)	
* 205	3-359-427-01	SLIDER (LEVERSE SLIDER) (C50)	
206	3-359-454-01	SPRING, TORSION (C50)	
207	3-359-420-01	GEAR (CAM GEAR) (C50)	
208	3-359-429-01	SLIDER (BRAKE PLATE) (C50)	
209	3-359-456-01	SPRING(TRIGGER SPRING), TORSION (C50)	
210	X-3359-405-1	LEVER (FR ARM) ASSY (C50)	
211	3-359-453-01	SPRING (FR ARM), TORSION (C50)	
212	3-359-419-01	GEAR (FR GEAR) (C50)	
213	3-359-421-01	CLUTCH (REEL DISK) (C50)	
214	3-359-418-01	PULLEY (FR PULLEY) (C50)	
215	X-3363-790-1	CHASSIS, MECHANICAL ASSY (C50)	
216	3-359-469-01	SPACER (C50)	

8-6. MECHANISM DECK SECTION 3 (HCD-C50U) (TCM-210W3)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271 (including ▲A)
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262
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▲A
M901
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M902
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261
# 8
# 10
253
259
258
255
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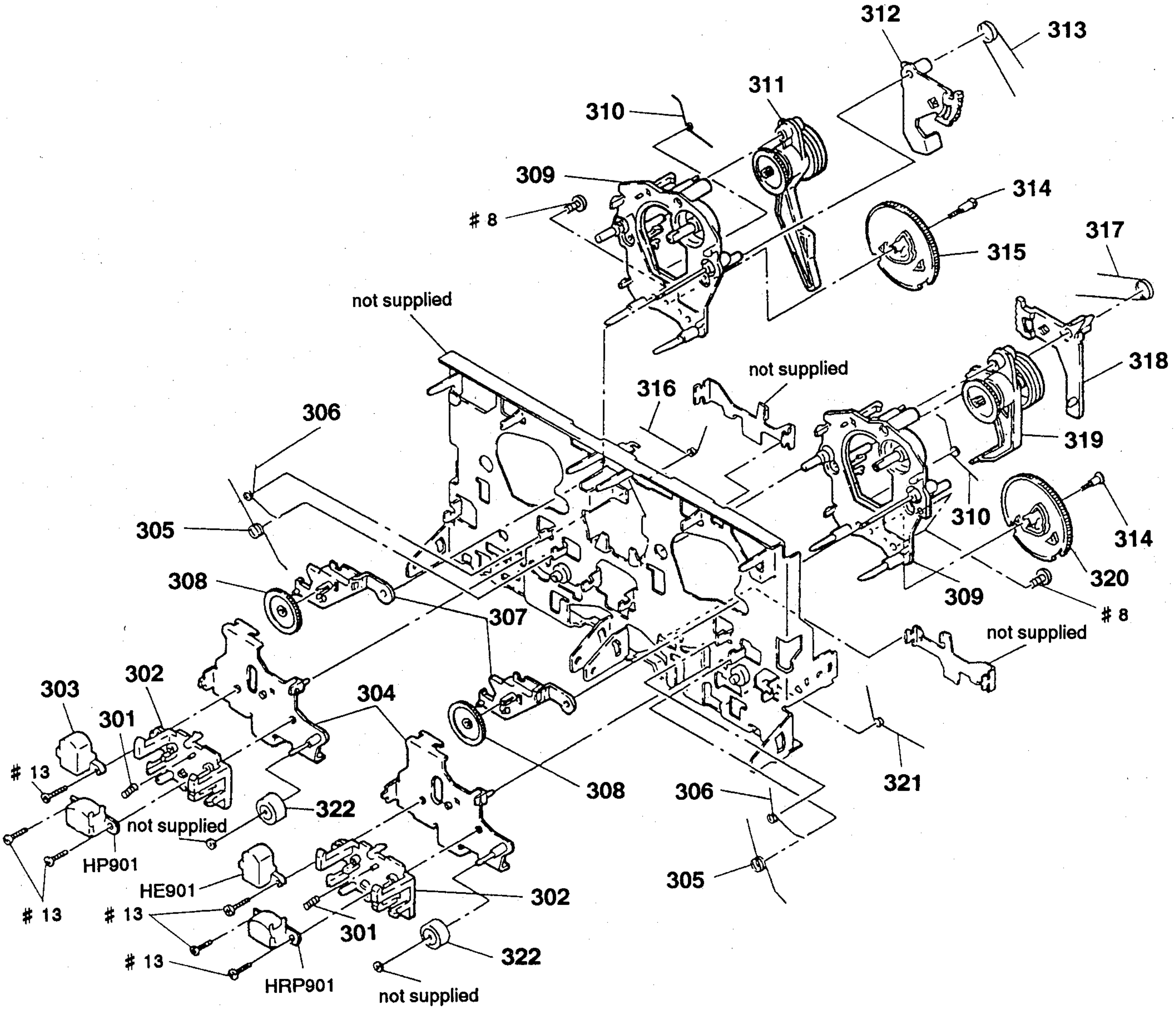
# 11
not supplied
256
# 6
# 9
259
255
257
258
# 9
256
not supplied
260
274
265
262
264
254
252
251

Ref. No.	Part No.	Description	Remark
251	3-381-788-01	SPRING (LOADING B), TORSION (C50U)	
252	3-381-787-01	SPRING (LOADING A), TORSION (C50U)	
253	X-3365-440-1	HOLDER (A) ASSY, CASSETTE (C50U)	
254	X-3365-441-1	HOLDER (B) ASSY, CASSETTE (C50U)	
255	3-382-524-01	GEAR (S SIDE REEL) (C50U)	
256	X-3365-559-1	TABLE (T) ASSY, REEL (C50U)	
257	X-3365-447-1	GEAR (FF) ASSY (C50U)	
258	3-382-078-01	SPRING (FF), COMPRESSION (C50U)	
259	3-358-208-01	SPRING (SUPPLY), COMPRESSION (C50U)	
260	X-3365-438-1	FLYWHEEL (B) ASSY (C50U)	
261	3-382-929-01	SPRING (CASSETTE DETENT), LEAF (C50U)	
262	3-354-957-01	JOINT (LOCK LEVER)	
* 263	3-367-709-01	LEVER (LOCK LEVER L)	
* 264	3-367-710-01	LEVER (LOCK LEVER R)	
265	3-701-437-21	WASHER (C50U)	
266	X-3365-437-1	FLYWHEEL (A) ASSY (C50U)	
267	3-382-859-02	BELT (CAPSTAN A) (C50U)	
268	4-928-951-01	BELT (CAPSTAN) (C50U)	
269	3-381-776-01	HOLDER (LED) (C50U)	
270	3-355-801-01	SCREW (BTP 2X18) (C50U)	
* 271	1-644-686-21	LEAF SWITCH BOARD (A, B) (C50U)	
272	4-919-393-31	DAMPER (C50U)	
273	3-381-777-01	BRACKET (C50U)	
274	3-382-860-02	BELT (CAPSTAN B) (C50U)	
M901	X-3362-377-1	MOTOR (WH) ASSY (CAPSTAN) (C50U)	
M902	A-2004-188-A	MOTOR ASSY, DC (TRIGGER) (C50U)	

8-7. MECHANISM DECK SECTION 4 (HCD-C50U) (TCM-210W3)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309
307
# 8
not supplied
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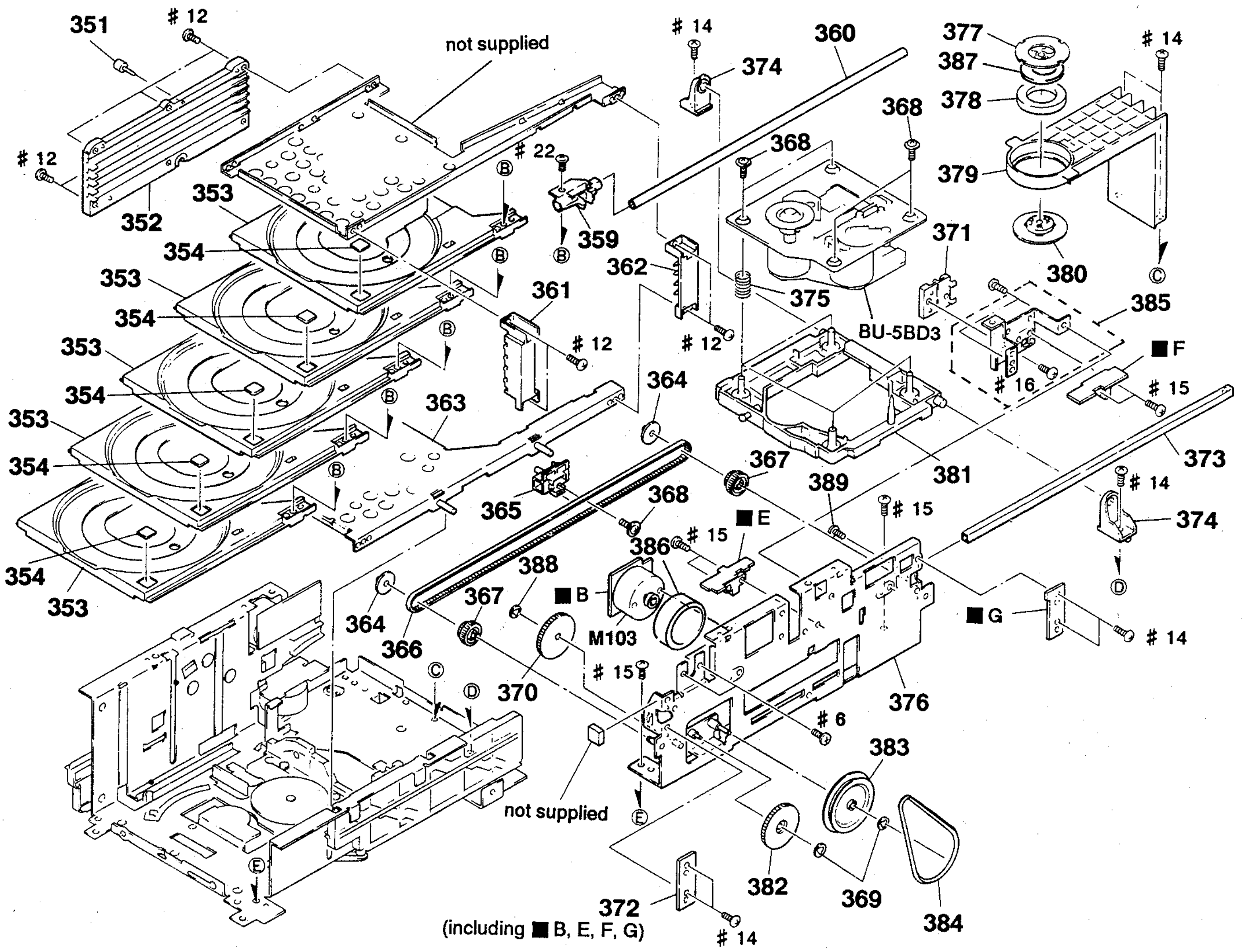
302
304
301
# 13
308
306
321
322
not supplied
HP901
HE901
302
# 13
# 13
305
301
322
# 13
HRP901
not supplied

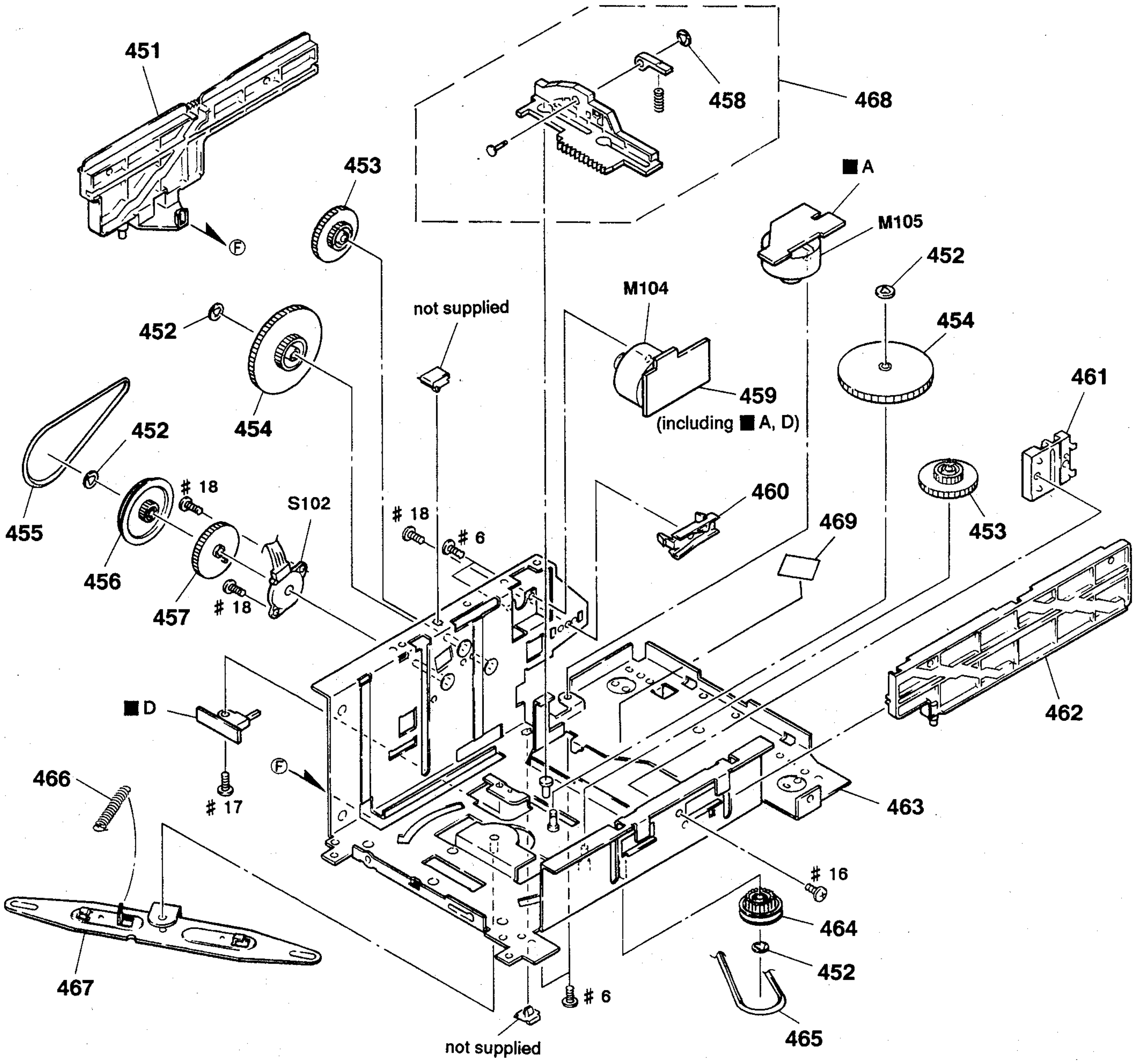
Ref. No.	Part No.	Description	Remark
301	3-343-484-01	SPRING, COMPRESSION (C50U)	
302	3-381-778-01	HOLDER (HEAD) (C50U)	
303	3-319-716-01	GUIDE, TAPE (C50U)	
304	X-3365-814-1	SLIDER (HEAD) ASSY (C50U)	
305	3-382-076-01	SPRING (HEAD), TORSION (C50U)	
306	3-382-077-01	SPRING (TU), TORSION (C50U)	
307	3-381-785-01	LEVER (TU) (C50U)	
* 308	3-358-284-01	GEAR (TU GEAR) (C50U)	
* 309	X-3365-443-1	CHASSIS (M) ASSY (C50U)	
310	3-383-498-01	SPRING (CAM), TORSION (C50U)	
311	X-3365-444-1	LEVER (FR ARM A) ASSY (C50U)	
312	3-381-781-01	LEVER (TRIGGER A) (C50U)	
313	3-382-074-01	SPRING (TRIGGER A), TORSION (C50U)	
314	3-381-810-01	SCREW, STEP (C50U)	
315	3-381-779-01	CAM (A) (C50U)	
316	3-383-056-02	SPRING (SLIDER A), TORSION (C50U)	
317	3-382-075-01	SPRING (TRIGGER B), TORSION (C50U)	
318	3-381-782-01	LEVER (TRIGGER B) (C50U)	
319	X-3365-445-1	LEVER (FR ARM B) ASSY (C50U)	
320	3-381-780-01	CAM (B) (C50U)	
321	3-383-057-02	SPRING (SLIDER B), TORSION (C50U)	
322	3-355-808-21	PINCH ROLLER (C50U)	
HE901	1-543-673-11	HEAD, MAGNETIC (ERASE) (C50U)	
HP901	1-543-940-11	HEAD, MAGNETIC (PLAYBACK) (C50U)	
HRP901	1-543-319-11	HEAD, MAGNETIC (REC/PB) (C50U)	

8-8. CD MECHANISM SECTION 1
(CDM23B-5BD3)


351
# 12
not supplied
# 14
374
360
377
387
378
# 14
368
368
379
# 12
# 22
Ⓑ
359
Ⓑ
352
353
354
Ⓑ
362
371
380
Ⓒ
353
361
375
385
354
Ⓑ
# 12
# 12
BU-5BD3
■F
353
364
# 16
# 15
354
Ⓑ
363
353
367
373
381
354
Ⓑ
389
# 14
368
# 15
365
■E
374
386
# 15
388
354
353
Ⓓ
364
367
■B
■G
366
M103
# 14
Ⓒ
# 15
Ⓓ
370
376
# 6
383
not supplied
Ⓔ
Ⓔ
382
369
372
(including ■B, E, F, G)
# 14
384

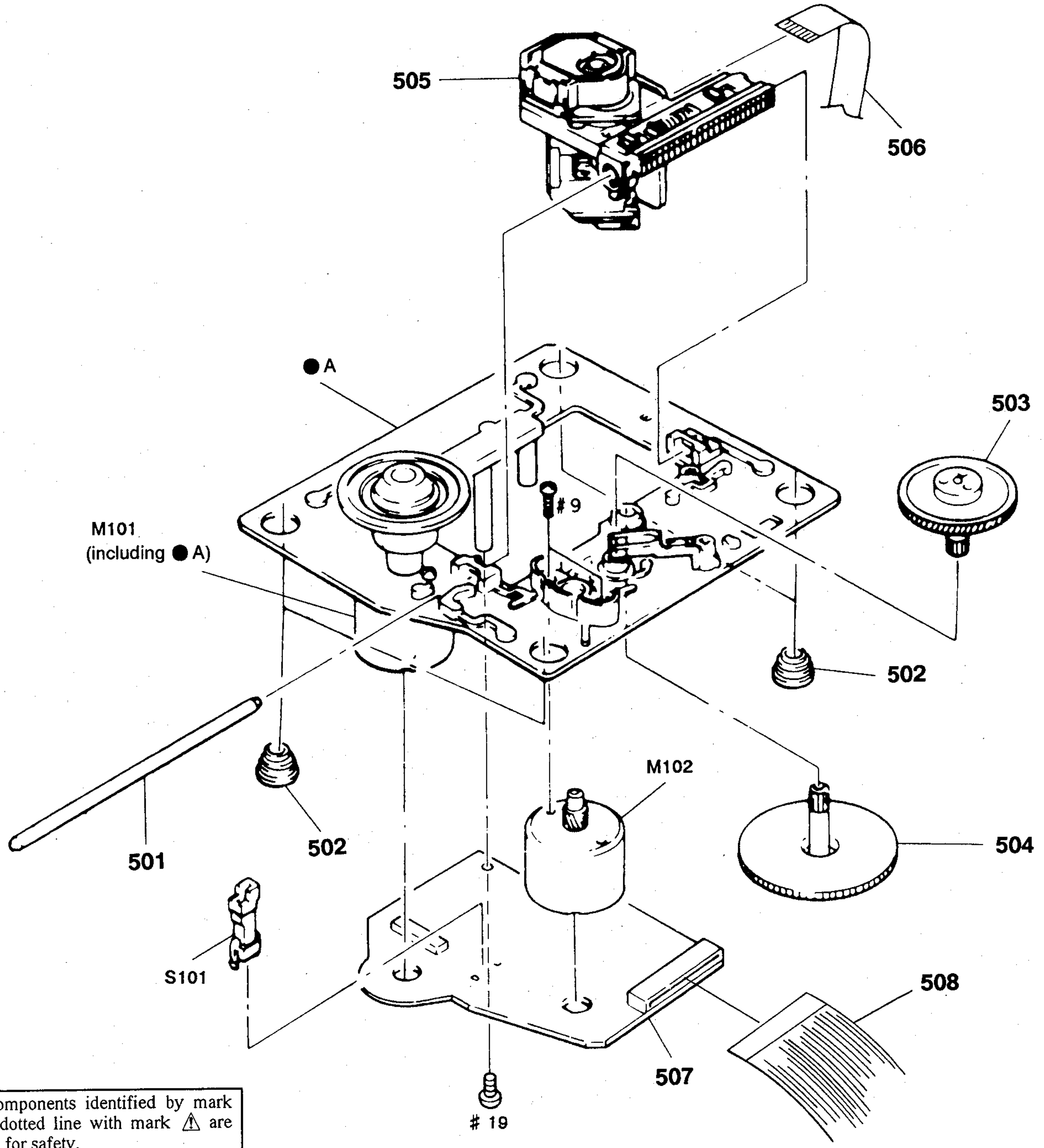
Ref. No.	Part No.	Description	Remark
351	4-954-649-01	SHAFT (ST-L)	
352	4-954-644-01	BRACKET (STOCKER L)	
353	4-954-638-01	TABLE, DISK	
354	4-954-651-01	EMBLEM (TABLE)	
355	4-954-651-11	EMBLEM (TABLE)	
356	4-954-651-21	EMBLEM (TABLE)	
357	4-954-651-31	EMBLEM (TABLE)	
358	4-954-651-41	EMBLEM (TABLE)	
359	4-954-639-01	GUIDE (TB)	
* 360	4-954-648-01	SHAFT (TABLE GUIDE)	
361	4-954-645-01	GUIDE (ST-RF)	
362	4-954-646-01	GUIDE (ST-RR)	
* 363	X-4942-943-1	BRACKET (ST-B) ASSY	
364	4-954-628-01	FLANGE (PULLEY)	
365	4-954-630-01	SLIDER (TB)	
366	4-954-634-01	BELT (SL)	
367	4-954-629-01	PULLEY (SL)	
368	4-933-134-01	SCREW (+PTPWH M2.6X6)	
369	3-669-595-00	WASHER (2), STOPPER	
370	4-954-627-01	GEAR (SL)	
* 371	4-954-621-01	STOPPER (TB)	
* 372	1-645-607-11	CDM MOTOR BOARD (A-H)	
* 373	4-954-631-01	SHAFT (SL GUIDE)	
* 374	4-954-623-01	FULCRUM (BU)	
375	4-955-575-01	SPRING (BU), COMPRESSION	
* 376	X-4942-941-1	BRACKET (SL-A) ASSY	
377	4-929-762-01	YOKE, CHUCKING	
378	1-452-676-11	MAGNET	
379	4-954-650-01	HOLDER (MG)	
380	4-955-230-01	PULLEY (CHUCKING)	
* 381	X-4942-942-1	HOLDER (BU) ASSY	
382	4-954-625-01	GEAR (CDM)	
383	3-372-516-01	PULLEY (LOADING)	
384	4-954-624-01	BELT (CDM)	
* 385	A-4660-264-A	BRACKET (SL-B) ASSY	
* 386	3-162-496-01	CORE, SHIELD	
387	4-955-231-01	SPACER (MG)	
388	3-558-708-21	WASHER, STOPPER	
389	4-955-890-01	SCREW (3X6)	
M103	A-4660-232-A	MOTOR (CDM) ASSY (LOADING)	

8-9. CD MECHANISM SECTION 2 (CDM23B-5BD3)


451
Ⓕ
453
458
468
■A
M105
452
M104
not supplied
452
454
454
459
(including ■A, D)
461
452
454
455
456
# 18
S102
# 18
# 6
460
469
453
457
# 18
462
■D
466
Ⓕ
# 17
463
# 16
464
452
467
# 6
not supplied
465

Ref. No.	Part No.	Description	Remark
451	X-4942-939-1	SLIDER (ST-L) ASSY	
452	3-558-708-21	WASHER, STOPPER	
453	4-954-625-01	GEAR (CDM)	
454	3-372-517-01	GEAR (LOADING)	
455	4-954-624-01	BELT (CDM)	
456	3-372-516-01	PULLEY (LOADING)	
457	4-954-636-01	GEAR (E)	
458	3-681-678-00	WASHER, SLIT	
* 459	1-645-607-11	CDM MOTOR BOARD (A-H)	
* 460	4-954-633-01	GUIDE (TB-LR)	
* 461	4-954-621-01	STOPPER (TB)	
462	X-4942-940-1	SLIDER (ST-R) ASSY	
* 463	X-4942-937-1	CHASSIS (CDM) ASSY	
464	4-954-637-01	PULLEY (BU)	
465	4-954-635-01	BELT (BU)	
466	4-955-168-01	SPRING, TENSION	
* 467	4-954-632-02	LEVER (JOINT)	
468	A-4660-167-A	SLIDER (BU CAM) ASSY	
469	4-928-473-01	INSULATOR	
M104	A-4660-232-A	MOTOR (CDM) ASSY (UP/DOWN)	
M105	A-4660-232-A	MOTOR (CDM) ASSY (CLAMP)	
S102	1-466-819-11	ENCODER, ROTARY	

8-10. OPTICAL PICK-UP SECTION (BU-5BD3)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
501	4-917-565-01	SHAFT, SLED	
502	4-933-126-01	INSULATOR (A)	
503	4-917-567-01	GEAR (M)	
504	4-917-564-01	GEAR (P), FLATNESS	
⚠505	8-848-144-11	DEVICE, OPTICAL KSS-240A	
506	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
* 507	A-4617-371-A	BD BOARD, COMPLETE	
508	1-751-597-11	WIRE (FLAT TYPE)(22 CORE)	
M101	X-4917-523-3	MOTOR ASSY, DISK (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
S101	1-572-085-11	SWITCH LEAF (LIMIT)	

SECTION 9
ELECTRICAL PARTS LIST

BD

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- CND : Canadian model
- G : German model
- IT : Italian model
- EE : East European model
- EA : Saudi Arabia model
- AUS : Australian model
- SP : Singapore model

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts color Cabinet's color
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH
- Hardware (# mark) list is given in the last of this parts list.

Ref. No.	Part No.	Description				Remark
*	A-4617-371-A	BD BOARD, COMPLETE ******************				
		< CAPACITOR >				
C101	1-163-038-91	CERAMIC CHIP	0. 1uF		25V	
C102	1-163-989-11	CERAMIC CHIP	0. 033uF	10%	25V	
C103	1-126-163-11	ELECT	4. 7uF	20%	50V	
C104	1-163-038-91	CERAMIC CHIP	0. 1uF		25V	
C105	1-126-154-11	ELECT	47uF	20%	6. 3V	
C106	1-126-154-11	ELECT	47uF	20%	6. 3V	
C107	1-126-154-11	ELECT	47uF	20%	6. 3V	
C108	1-163-038-91	CERAMIC CHIP	0. 1uF		25V	
C109	1-163-038-91	CERAMIC CHIP	0. 1uF		25V	
C110	1-163-989-11	CERAMIC CHIP	0. 033uF	10%	25V	
C111	1-131-367-00	TANTALUM	22uF	10%	20V	
C112	1-164-232-11	CERAMIC CHIP	0. 01uF		50V	
C113	1-164-232-11	CERAMIC CHIP	0. 01uF		50V	
C114	1-164-161-11	CERAMIC CHIP	0. 0022uF	10%	100V	
C115	1-164-161-11	CERAMIC CHIP	0. 0022uF	10%	100V	
C117	1-163-038-91	CERAMIC CHIP	0. 1uF		25V	
C118	1-163-038-91	CERAMIC CHIP	0. 1uF		25V	
C119	1-164-161-11	CERAMIC CHIP	0. 0022uF	10%	100V	
C120	1-163-989-11	CERAMIC CHIP	0. 033uF	10%	25V	
C151	1-163-019-00	CERAMIC CHIP	0. 0068uF	10%	50V	
C152	1-163-038-91	CERAMIC CHIP	0. 1uF		25V	
C153	1-163-006-11	CERAMIC CHIP	560PF	10%	50V	
C154	1-164-161-11	CERAMIC CHIP	0. 0022uF	10%	100V	
C155	1-163-023-00	CERAMIC CHIP	0. 015uF	5%	50V	
C171	1-163-038-91	CERAMIC CHIP	0. 1uF		25V	
C172	1-163-038-91	CERAMIC CHIP	0. 1uF		25V	
C173	1-163-038-91	CERAMIC CHIP	0. 1uF		25V	
C174	1-163-038-91	CERAMIC CHIP	0. 1uF		25V	
		< CONNECTOR >				
CN101	1-568-796-11	SOCKET, CONNECTOR 22P				
CN102	1-568-795-11	SOCKET, CONNECTOR 12P				
		< IC >				
IC101	8-752-053-73	IC CXA1372AQ				
IC102	8-759-822-36	IC LA6532M				

Ref. No.	Part No.	Description				Remark
		< JUMPER RESISTOR >				
JR101	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR102	1-216-295-00	METAL CHIP	0	5%	1/10W	
		< MOTOR >				
M101	X-4917-523-3	MOTOR, DISK ASSY (SPINDLE)				
M102	X-4917-504-1	MOTOR, ASSY (SLED)				
		< TRANSISTOR >				
Q101	8-729-901-01	TRANSISTOR DTC144EK				
		< RESISTOR >				
R101	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R102	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R103	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R104	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R105	1-216-069-00	METAL CHIP	6. 8K	5%	1/10W	
R106	1-216-061-00	METAL CHIP	3. 3K	5%	1/10W	
R107	1-216-114-00	METAL GLAZE	510K	5%	1/10W	
R108	1-216-105-91	METAL GLAZE	220K	5%	1/10W	
R109	1-216-061-00	METAL CHIP	3. 3K	5%	1/10W	
R110	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R111	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R112	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R113	1-216-071-00	METAL CHIP	8. 2K	5%	1/10W	
R114	1-216-105-91	METAL GLAZE	220K	5%	1/10W	
R152	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R153	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R154	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R155	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R156	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R157	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R158	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R159	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R160	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R171	1-216-001-00	METAL CHIP	10	5%	1/10W	
R172	1-216-001-00	METAL CHIP	10	5%	1/10W	
R173	1-216-001-00	METAL CHIP	10	5%	1/10W	
R174	1-216-001-00	METAL CHIP	10	5%	1/10W	

BD CD MAIN

Ref. No.	Part No.	Description			Remark
		< VARIABLE RESISTOR >			
RV101	1-238-600-11	RES, ADJ, CARBON 10K			
RV102	1-238-600-11	RES, ADJ, CARBON 10K			
		< SWITCH >			
S101	1-572-085-11	SWITCH, LEAF (LIMIT)			

****

Ref. No.	Part No.	Description			Remark
*	A-4360-947-A	CD MAIN BOARD, COMPLETE ***********************			
		< CAPACITOR >			
C400	1-124-360-00	ELECT	1000uF	20%	16V
C405	1-124-443-00	ELECT	100uF	20%	10V
C406	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C407	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C408	1-124-443-00	ELECT	100uF	20%	10V
C409	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C410	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C411	1-126-176-11	ELECT	220uF	20%	10V
C412	1-164-346-11	CERAMIC CHIP	1uF		16V
C413	1-164-346-11	CERAMIC CHIP	1uF		16V
C414	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C415	1-124-443-00	ELECT	100uF	20%	10V
C419	1-164-346-11	CERAMIC CHIP	1uF		16V
C420	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C421	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C422	1-164-346-11	CERAMIC CHIP	1uF		16V
C423	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C424	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C425	1-164-346-11	CERAMIC CHIP	1uF		16V
C426	1-164-346-11	CERAMIC CHIP	1uF		16V
C427	1-164-346-11	CERAMIC CHIP	1uF		16V
C428	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C429	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C430	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C431	1-164-346-11	CERAMIC CHIP	1uF		16V
C432	1-164-346-11	CERAMIC CHIP	1uF		16V
C433	1-164-346-11	CERAMIC CHIP	1uF		16V
C434	1-164-346-11	CERAMIC CHIP	1uF		16V
C435	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C436	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C437	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C438	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C442	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C443	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C450	1-124-604-00	ELECT	330uF	20%	10V
C452	1-124-604-00	ELECT	330uF	20%	10V
C454	1-124-903-11	ELECT	1uF	20%	50V
C455	1-124-902-00	ELECT	0.47uF	20%	50V
C456	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C457	1-124-917-11	ELECT	33uF	20%	63V
C458	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C460	1-124-604-00	ELECT	330uF	20%	10V
C482	1-130-481-00	MYLAR	0.0068uF	5%	50V
C483	1-130-481-00	MYLAR	0.0068uF	5%	50V
C484	1-124-907-11	ELECT	10uF	20%	50V
C485	1-124-907-11	ELECT	10uF	20%	50V
		< CONNECTOR >			
CN402	1-695-383-31	PIN, CONNECTOR (PC BOARD) 22P			
CN403	1-691-644-11	SOCKET, CONNECTOR 7P			
CN404	1-695-376-21	PIN, CONNECTOR (PC BOARD) 15P			
CN406	1-506-481-11	PIN, CONNECTOR 2P			
* CN407	1-568-945-11	PIN, CONNECTOR 7P			
* CN408	1-573-275-11	PIN, CONNECTOR 5P			
* CN409	1-568-941-11	PIN, CONNECTOR 3P			
* CN410	1-568-941-11	PIN, CONNECTOR 3P			
* CN411	1-568-942-11	PIN, CONNECTOR 4P			
		< DIODE >			
D406	8-719-990-39	DIODE DCB010			
D407	8-719-210-33	DIODE EC10DS2			
D408	8-719-210-33	DIODE EC10DS2			
D410	8-719-990-39	DIODE DCB010			
		< IC >			
IC402	8-759-605-00	IC M5F78M07L			
IC403	8-759-821-93	IC LA5601			
IC404	8-759-821-93	IC LA5601			
IC408	8-759-009-21	IC MC14093BF			
IC409	8-752-352-93	IC CXD2500BQ			
IC410	8-759-098-27	IC MSM6538-01GS-VKR1			
IC411	8-759-155-52	IC PCM-67U-B			
IC412	8-759-636-55	IC M5218AFP			
IC414	8-759-501-73	IC BA6418N			
IC415	8-759-501-73	IC BA6418N			
IC416	8-759-501-73	IC BA6418N			
IC450	8-759-163-37	IC uPD75516GF-461-3B9			
		< JUMPER RESISTOR >			
JR401	1-216-295-00	METAL CHIP	0	5%	1/10W
JR403	1-216-295-00	METAL CHIP	0	5%	1/10W
JR410	1-216-295-00	METAL CHIP	0	5%	1/10W
JR488	1-216-295-00	METAL CHIP	0	5%	1/10W
JR490	1-216-295-00	METAL CHIP	0	5%	1/10W
		< COIL >			
L401	1-408-777-00	INDUCTOR CHIP	10uH		

Ref. No.	Part No.	Description				Remark
L402	1-408-777-00	INDUCTOR CHIP	10uH			
L403	1-408-777-00	INDUCTOR CHIP	10uH			
L405	1-408-777-00	INDUCTOR CHIP	10uH			

< TRANSISTOR >

Ref. No.	Part No.	Description				Remark
Q401	8-729-118-01	TRANSISTOR	2SB1116-K			
Q402	8-729-900-80	TRANSISTOR	DTC114ES			

< RESISTOR >

Ref. No.	Part No.	Description				Remark
R401	1-216-001-00	METAL CHIP	10	5%	1/10W	
R402	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R404	1-216-043-00	METAL CHIP	560	5%	1/10W	
R405	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R406	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R407	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R408	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R409	1-216-349-00	CARBON	1	5%	1/2W	
R417	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R418	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R419	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R420	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R421	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R422	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R423	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R424	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R425	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R426	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R427	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R428	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R429	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R430	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R431	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R432	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R433	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R434	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R435	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R436	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R437	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R439	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R440	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R441	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R442	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R443	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R444	1-216-041-00	METAL CHIP	470	5%	1/10W	
R445	1-216-041-00	METAL CHIP	470	5%	1/10W	
R446	1-216-041-00	METAL CHIP	470	5%	1/10W	
R447	1-216-041-00	METAL CHIP	470	5%	1/10W	
R449	1-216-041-00	METAL CHIP	470	5%	1/10W	
R450	1-216-041-00	METAL CHIP	470	5%	1/10W	
R451	1-216-041-00	METAL CHIP	470	5%	1/10W	
R452	1-216-041-00	METAL CHIP	470	5%	1/10W	
R453	1-216-060-00	METAL GLAZE	3K	5%	1/10W	
R454	1-216-060-00	METAL GLAZE	3K	5%	1/10W	
R460	1-216-068-00	METAL CHIP	6.2K	5%	1/10W	
R461	1-216-068-00	METAL CHIP	6.2K	5%	1/10W	
R462	1-216-009-00	METAL CHIP	22	5%	1/10W	
R463	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R464	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R468	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R469	1-216-025-00	METAL CHIP	100	5%	1/10W	
R470	1-216-025-00	METAL CHIP	100	5%	1/10W	
R471	1-216-025-00	METAL CHIP	100	5%	1/10W	
R472	1-216-025-00	METAL CHIP	100	5%	1/10W	
R473	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R474	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R475	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R476	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R478	1-216-025-00	METAL CHIP	100	5%	1/10W	
R483	1-216-035-00	METAL CHIP	270	5%	1/10W	
R484	1-216-035-00	METAL CHIP	270	5%	1/10W	
R485	1-216-105-91	METAL GLAZE	220K	5%	1/10W	
R486	1-216-105-91	METAL GLAZE	220K	5%	1/10W	
R492	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R493	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R494	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R495	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R496	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R497	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R498	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R499	1-216-089-91	METAL GLAZE	47K	5%	1/10W	

< SWITCH >

Ref. No.	Part No.	Description				Remark
S102	1-466-819-11	ENCODER, ROTARY				

< VIBRATOR >

Ref. No.	Part No.	Description				Remark
X401	1-577-359-21	VIBRATOR, CERAMIC (4.19MHz)				
X402	1-567-908-11	VIBRATOR, CRYSTAL (16MHz)				

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Ref. No.	Part No.	Description				Remark
*	1-645-607-11	CDM MOTOR BOARD (A-H)				

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< CAPACITOR >

Ref. No.	Part No.	Description				Remark
C101	1-164-159-11	CERAMIC	0.1uF		50V	
C102	1-164-159-11	CERAMIC	0.1uF		50V	
C103	1-164-159-11	CERAMIC	0.1uF		50V	

< CONNECTOR >

Ref. No.	Part No.	Description				Remark
* CN106	1-568-954-11	PIN, CONNECTOR 5P				

CDM MOTOR DISPLAY

Ref.No.	Part No.	Description				Remark
		< IC >				
IC401	8-759-071-52	IC ON1023-S				
IC601	8-759-071-52	IC ON1023-S				
		< MOTOR >				
M103	A-4660-232-A	MOTOR (CDM) ASSY (LOADING)				
M104	A-4660-232-A	MOTOR (CDM) ASSY (UP/DOWN)				
M105	A-4660-232-A	MOTOR (CDM) ASSY (CLAMP)				
		< RESISTOR >				
R401	1-249-407-11	CARBON	150	5%	1/4W	F
R402	1-249-429-11	CARBON	10K	5%	1/4W	
R601	1-249-407-11	CARBON	150	5%	1/4W	F
R602	1-249-429-11	CARBON	10K	5%	1/4W	
		< SWITCH >				
S101	1-571-300-21	SWITCH, ROTARY (BU UP/DOWN)				
S103	1-692-080-11	SWITCH, PUSH (1 KEY)(TRAY OUT)				
S104	1-692-080-11	SWITCH, PUSH (1 KEY)(TRAN IN)				

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Ref.No.	Part No.	Description				Remark
*	A-4360-946-A	DISPLAY BOARD, COMPLETE (C50:CND/C50U)				
		**********************				
*	A-4360-962-A	DISPLAY BOARD, COMPLETE (C50:G)				
		**********************				
*	A-4360-971-A	DISPLAY BOARD, COMPLETE (C50:AEP, UK)				
		**********************				
*	A-4360-978-A	DISPLAY BOARD, COMPLETE				
		**********************				
		(C50:E, EA, AUS, SP, PX)				
*	A-4365-147-A	DISPLAY BOARD, COMPLETE (C50:IT)				
		**********************				
*	A-4365-149-A	DISPLAY BOARD, COMPLETE (C50:EE)				
		**********************				
*	4-955-901-01	CUSHION (FL)				
*	4-959-227-01	HOLDER, LED				
	4-959-581-01	COVER (SENSOR)				
		< CAPACITOR >				
C501	1-126-160-11	ELECT	1uF	20%	50V	
C502	1-126-160-11	ELECT	1uF	20%	50V	
C503	1-164-097-11	CERAMIC	0.022uF		50V	
C505	1-126-301-11	ELECT	1uF	20%	50V	
C506	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C507	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C508	1-136-165-00	FILM	0.1uF	5%	50V	
C509	1-163-033-00	CERAMIC CHIP	0.022uF		50V	

Ref.No.	Part No.	Description			Remark
C510	1-136-173-00	FILM	0.47uF	5%	50V
C511	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C512	1-164-097-11	CERAMIC	0.022uF		50V
C513	1-124-261-00	ELECT	10uF	20%	50V
C514	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C515	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C516	1-124-261-00	ELECT	10uF	20%	50V
C517	1-125-486-11	DOUBLE LAYERS	0.22F		5.5V
C518	1-124-261-00	ELECT	10uF	20%	50V
C598	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C601	1-164-346-11	CERAMIC CHIP	1uF		16V
C602	1-164-346-11	CERAMIC CHIP	1uF		16V
C603	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C604	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C881	1-124-257-00	ELECT	2.2uF	20%	50V
C882	1-124-257-00	ELECT	2.2uF	20%	50V
C883	1-124-257-00	ELECT	2.2uF	20%	50V
C884	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C885	1-124-465-00	ELECT	0.47uF	20%	50V
C886	1-124-257-00	ELECT	2.2uF	20%	50V
C887	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C888	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C889	1-124-257-00	ELECT	2.2uF	20%	50V
C890	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C891	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C892	1-124-257-00	ELECT	2.2uF	20%	50V
C893	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C894	1-165-319-11	CERAMIC CHIP	0.1uF		50V
		< CONNECTOR >			
CN601	1-691-648-11	SOCKET, CONNECTOR 15P			
CN602	1-695-372-31	PIN, CONNECTOR (PC BOARD) 11P			
CN603	1-695-380-31	PIN, CONNECTOR (PC BOARD) 19P			
		< DIODE >			
D425	8-719-301-37	LED SEL2210S-CD (TUNING)			
D426	8-719-301-37	LED SEL2210S-CD (PRESET)			
D502	8-719-990-39	DIODE DCB010			
D503	8-719-210-33	DIODE EC10DS2			
D504	8-719-990-39	DIODE DCB010			
D505	8-719-990-39	DIODE DCB010			
D506	8-719-990-39	DIODE DCB010			
D507	8-719-400-62	DIODE MA3068-L			
D508	8-719-990-39	DIODE DCB010			
D601	8-719-990-39	DIODE DCB010			
D603	8-719-301-43	LED SEL2410E-C (DISC 1)			
D604	8-719-301-43	LED SEL2410E-C (DISC 2)			
D605	8-719-301-43	LED SEL2410E-C (DISC 3)			
D606	8-719-301-43	LED SEL2410E-C (DISC 4)			
D607	8-719-301-43	LED SEL2410E-C (DISC 5)			

Ref. No.	Part No.	Description	Remark
D608	8-719-301-38	LED SEL2210S-C (DISC 1)	
D609	8-719-301-38	LED SEL2210S-C (DISC 2)	
D610	8-719-301-38	LED SEL2210S-C (DISC 3)	
D611	8-719-301-38	LED SEL2210S-C (DISC 4)	
D612	8-719-301-38	LED SEL2210S-C (DISC 5)	
D627	8-719-029-95	LED TLN117	
D881	8-719-990-39	DIODE DCB010	
D882	8-719-990-39	DIODE DCB010	
D883	8-719-990-39	DIODE DCB010	
D884	8-719-990-39	DIODE DCB010	
D885	8-719-990-39	DIODE DCB010	
		< FLUORESCENT INDICATOR >	
FL501	1-517-182-11	INDICATOR TUBE, FLUORESCENT	
		< IC >	
IC501	8-759-175-89	IC uPD78042-GF-033-3B9	
IC502	8-759-634-43	IC M51953BFP	
IC601	8-759-175-91	IC uPD75517-GF-209-3B9	
		< JUMPER RESISTOR >	
JR601	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR800	1-216-296-00	METAL CHIP 0 5% 1/8W	
		< COIL >	
L501	1-408-789-21	INDUCTOR CHIP 100uH	
L601	1-408-777-00	INDUCTOR CHIP 10uH	
		< TRANSISTOR >	
Q501	8-729-602-21	TRANSISTOR 2SC4154-F	
Q502	8-729-602-21	TRANSISTOR 2SC4154-F	
Q601	8-729-602-21	TRANSISTOR 2SC4154-F	
Q602	8-729-602-36	TRANSISTOR 2SA1602-F	
Q603	8-729-602-36	TRANSISTOR 2SA1602-F	
Q604	8-729-018-23	TRANSISTOR TPS626	
Q605	8-729-602-21	TRANSISTOR 2SC4154-F	
Q606	8-729-602-21	TRANSISTOR 2SC4154-F	
Q607	8-729-602-21	TRANSISTOR 2SC4154-F	
Q608	8-729-602-21	TRANSISTOR 2SC4154-F	
Q609	8-729-602-21	TRANSISTOR 2SC4154-F	
		< RESISTOR >	
R503	1-216-025-00	METAL CHIP 100 5% 1/10W	
R505	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R506	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R507	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R527	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R528	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R529	1-216-089-91	METAL GLAZE 47K 5% 1/10W	

Ref. No.	Part No.	Description	Remark
R530	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R531	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R532	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R533	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R534	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R535	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R536	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R537	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R538	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R539	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R540	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R541	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R542	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R543	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R544	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R548	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R549	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R550	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R551	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R552	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R553	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R554	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R560	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R562	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R563	1-216-041-00	METAL CHIP 470 5% 1/10W	(C50:E, EA, AUS, SP, PX)
R563	1-216-050-00	METAL CHIP 1.1K 5% 1/10W	(C50:AEP, UK)
R563	1-216-057-91	METAL GLAZE 2.2K 5% 1/10W	(C50:CND/C50U)
R563	1-216-062-00	METAL CHIP 3.6K 5% 1/10W	(C50:IT)
R563	1-216-067-91	METAL CHIP 5.6K 5% 1/10W	(C50:EE)
R563	1-216-072-00	METAL CHIP 9.1K 5% 1/10W	(C50:G)
R564	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R565	1-216-057-91	METAL GLAZE 2.2K 5% 1/10W	
R566	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R567	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R578	1-216-037-00	METAL CHIP 330 5% 1/10W	
R579	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R580	1-216-025-00	METAL CHIP 100 5% 1/10W	
R581	1-216-027-00	METAL CHIP 120 5% 1/10W	
R582	1-216-027-00	METAL CHIP 120 5% 1/10W	
R583	1-216-029-00	METAL CHIP 150 5% 1/10W	
R584	1-216-031-00	METAL CHIP 180 5% 1/10W	
R585	1-216-033-00	METAL CHIP 220 5% 1/10W	
R586	1-216-035-00	METAL CHIP 270 5% 1/10W	
R587	1-216-037-00	METAL CHIP 330 5% 1/10W	
R598	1-216-049-00	METAL CHIP 1K 5% 1/10W	

DISPLAY

Ref. No.	Part No.	Description				Remark
R599	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R600	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R601	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R603	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R604	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R606	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R607	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R608	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R609	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R610	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R611	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R612	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R614	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R615	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R616	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R617	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R618	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R619	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R620	1-216-027-00	METAL CHIP	120	5%	1/10W	
R621	1-216-027-00	METAL CHIP	120	5%	1/10W	
R622	1-216-027-00	METAL CHIP	120	5%	1/10W	
R623	1-216-027-00	METAL CHIP	120	5%	1/10W	
R624	1-216-027-00	METAL CHIP	120	5%	1/10W	
R625	1-216-024-00	METAL GLAZE	91	5%	1/10W	
R626	1-216-024-00	METAL GLAZE	91	5%	1/10W	
R627	1-216-024-00	METAL GLAZE	91	5%	1/10W	
R628	1-216-024-00	METAL GLAZE	91	5%	1/10W	
R629	1-216-024-00	METAL GLAZE	91	5%	1/10W	
R630	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R631	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R632	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R633	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R634	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R635	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R636	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R637	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R638	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W	
R651	1-216-041-00	METAL CHIP	470	5%	1/10W	
R652	1-216-045-00	METAL CHIP	680	5%	1/10W	
R653	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R654	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R655	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W	
R656	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R657	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R658	1-216-041-00	METAL CHIP	470	5%	1/10W	
R659	1-216-045-00	METAL CHIP	680	5%	1/10W	
R660	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R661	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R662	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W	
R663	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	

Ref. No.	Part No.	Description				Remark
R664	1-216-041-00	METAL CHIP	470	5%	1/10W	
R665	1-216-045-00	METAL CHIP	680	5%	1/10W	
R666	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R667	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R668	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W	
R669	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R670	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R684	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R690	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R691	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R692	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R693	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R699	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R881	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R882	1-216-044-00	METAL CHIP	620	5%	1/10W	
R883	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R884	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R885	1-216-047-00	METAL CHIP	820	5%	1/10W	
R886	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R887	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R888	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R889	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R890	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R891	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R892	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R893	1-216-072-00	METAL CHIP	9.1K	5%	1/10W	
R894	1-216-095-00	METAL CHIP	82K	5%	1/10W	

< SWITCH >

Ref. No.	Part No.	Description	Remark
S508	1-554-303-21	SWITCH, TACTILE (CLOCK SET/TIMER REC)	
S509	1-554-303-21	SWITCH, TACTILE (KARAOKE)	(C50:E, EA, AUS, SP, PX)
S510	1-554-303-21	SWITCH, TACTILE (CLOCK DISPLAY)	
S511	1-554-303-21	SWITCH, TACTILE (CLOCK SET/TIMER)	
S512	1-554-303-21	SWITCH, TACTILE (MEMORY/NEXT)	
S513	1-554-303-21	SWITCH, TACTILE (ST/MONO)	
S514	1-554-303-21	SWITCH, TACTILE (MODE)	
S515	1-554-303-21	SWITCH, TACTILE (BAND)	
S516	1-554-303-21	SWITCH, TACTILE (PRESET/TIMER -)	
S517	1-554-303-21	SWITCH, TACTILE (PRESET/TIMER +)	
S601	1-554-303-21	SWITCH, TACTILE (▷)	
S602	1-554-303-21	SWITCH, TACTILE (❚❚)	
S603	1-554-303-21	SWITCH, TACTILE (■)	
S604	1-554-303-21	SWITCH, TACTILE (OPEN/CLOSE ⏏ (1))	
S605	1-554-303-21	SWITCH, TACTILE (⏏ (2))	
S606	1-554-303-21	SWITCH, TACTILE (⏏ (3))	
S607	1-554-303-21	SWITCH, TACTILE (⏏ (4))	
S608	1-554-303-21	SWITCH, TACTILE (DISK CHECK ⏏ (5))	
S609	1-554-303-21	SWITCH, TACTILE (▶▶, ▷▷❙)	
S610	1-554-303-21	SWITCH, TACTILE (EDIT)	

Ref. No.	Part No.	Description	Remark
S611	1-554-303-21	SWITCH, TACTILE (DISC 1)	
S612	1-554-303-21	SWITCH, TACTILE (DISC 2)	
S613	1-554-303-21	SWITCH, TACTILE (DISC 3)	
S614	1-554-303-21	SWITCH, TACTILE (DISC 4)	
S615	1-554-303-21	SWITCH, TACTILE (DISC 5)	
S616	1-554-303-21	SWITCH, TACTILE (◀◀, |◁◁)	
S617	1-554-303-21	SWITCH, TACTILE (MUSIC/SCAN)	
S618	1-554-303-21	SWITCH, TACTILE (REPEAT)	
S619	1-554-303-21	SWITCH, TACTILE (PROGRAM)	
S620	1-554-303-21	SWITCH, TACTILE (SUFFLE)	
S621	1-554-303-21	SWITCH, TACTILE (CONTINUE)	
S622	1-554-303-21	SWITCH, TACTILE (CLEAR)	
S623	1-554-303-21	SWITCH, TACTILE (CHECK)	
		< VIBRATOR >	
X501	1-567-098-00	OSCILLATOR, CRYSTAL (32.768kHz)	
X502	1-577-359-21	VIBRATOR, CERAMIC (32.768kHz)	
X601	1-577-359-21	VIBRATOR, CERAMIC (4.19MHz)	

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Ref. No.	Part No.	Description	Remark
*	A-4360-951-A	FUNC BOARD, COMPLETE (C50U) ***************************	
*	A-4360-974-A	FUNC BOARD, COMPLETE (C50) **************************	
		< CAPACITOR >	
C516	1-126-096-11	ELECT 10uF 20% 35V	
C521	1-161-494-00	CERAMIC 0.022uF 25V	
		< CONNECTOR >	
CN604	1-691-646-11	SOCKET, CONNECTOR 11P	
		< DIODE >	
D421	8-719-301-37	LED SEL2210S-CD (MD/PHONO)	
D422	8-719-301-37	LED SEL2210S-CD (TUNER)(C50)	
D422	8-719-301-37	LED SEL2210S-CD (TAPE)(C50U)	
D423	8-719-301-37	LED SEL2210S-CD (CD)	
D424	8-719-301-37	LED SEL2210S-CD (TAPE)(C50)	
D424	8-719-301-37	LED SEL2210S-CD (TUNER)(C50U)	
		< IC >	
IC401	8-759-056-83	IC M66312P	
IC503	8-749-923-80	IC GP1U90XB	
		< RESISTOR >	
R555	1-249-405-11	CARBON 100 5% 1/4W	F
R556	1-249-405-11	CARBON 100 5% 1/4W	F
R569	1-249-437-11	CARBON 47K 5% 1/4W	
R570	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R571	1-249-405-11	CARBON 100 5% 1/4W	F
R572	1-249-406-11	CARBON 120 5% 1/4W	F
R573	1-249-406-11	CARBON 120 5% 1/4W	F
R574	1-249-407-11	CARBON 150 5% 1/4W	F
R575	1-249-408-11	CARBON 180 5% 1/4W	F
R576	1-249-409-11	CARBON 220 5% 1/4W	F
R577	1-249-409-11	CARBON 220 5% 1/4W	F
R588	1-249-429-11	CARBON 10K 5% 1/4W	
R589	1-249-417-11	CARBON 1K 5% 1/4W	F
R590	1-249-417-11	CARBON 1K 5% 1/4W	F
R591	1-249-429-11	CARBON 10K 5% 1/4W	
R592	1-249-413-11	CARBON 470 5% 1/4W	F
R593	1-249-413-11	CARBON 470 5% 1/4W	F
R594	1-249-413-11	CARBON 470 5% 1/4W	F
R595	1-249-413-11	CARBON 470 5% 1/4W	F
R596	1-249-413-11	CARBON 470 5% 1/4W	F
R597	1-249-413-11	CARBON 470 5% 1/4W	F
		< SWITCH >	
S500	1-554-303-21	SWITCH, TACTILE (POWER)	
S501	1-554-303-21	SWITCH, TACTILE (MD/PHONO)	
S502	1-554-303-21	SWITCH, TACTILE (TUNER)(C50)	
S502	1-554-303-21	SWITCH, TACTILE (TAPE)(C50U)	
S503	1-554-303-21	SWITCH, TACTILE (CD)	
S504	1-554-303-21	SWITCH, TACTILE (TAPE)(C50)	
S504	1-554-303-21	SWITCH, TACTILE (TUNER)(C50U)	
S505	1-554-303-21	SWITCH, TACTILE (SURROUND)	
S506	1-554-303-21	SWITCH, TACTILE (DBFB)	
S507	1-554-303-21	SWITCH, TACTILE (PRESET)	

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Ref. No.	Part No.	Description	Remark
*	1-648-416-11	HP BOARD ********	
		< BREAKER >	
CB951	1-532-564-00	BREAKER, CIRCUIT	
CB971	1-532-564-00	BREAKER, CIRCUIT	
		< CONNECTOR >	
* CN951	1-564-519-11	PLUG, CONNECTOR 4P	
* CN952	1-564-519-11	PLUG, CONNECTOR 4P	
		< JACK >	
J951	1-750-032-11	JACK (DIA. 3.5)(HEADPHONES)	
		< RESISTOR >	
R963	1-249-415-11	CARBON 680 5% 1/4W	F
R964	1-249-415-11	CARBON 680 5% 1/4W	F
R983	1-249-415-11	CARBON 680 5% 1/4W	F

HP KARAOKE.RELAY LEAF SWITCH

Ref. No.	Part No.	Description	Remark
R984	1-249-415-11	CARBON 680 5% 1/4W	F

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Ref. No.	Part No.	Description	Remark
*	1-648-763-11	KARAOKE.RELAY BOARD *******************	
		< CAPACITOR >	
C710	1-124-927-11	ELECT 4.7uF 20% 100V	(C50:E, EA, AUS, SP, PX)
C711	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	(C50:E, EA, AUS, SP, PX)
C712	1-163-022-00	CERAMIC CHIP 0.012uF 10% 50V	(C50:E, EA, AUS, SP, PX)
C713	1-163-109-00	CERAMIC CHIP 47PF 5% 50V	(C50:E, EA, AUS, SP, PX)
C714	1-163-109-00	CERAMIC CHIP 47PF 5% 50V	(C50:E, EA, AUS, SP, PX)
C715	1-124-927-11	ELECT 4.7uF 20% 100V	(C50:E, EA, AUS, SP, PX)
C760	1-124-927-11	ELECT 4.7uF 20% 100V	(C50:E, EA, AUS, SP, PX)
C761	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	(C50:E, EA, AUS, SP, PX)
C762	1-163-022-00	CERAMIC CHIP 0.012uF 10% 50V	(C50:E, EA, AUS, SP, PX)
C763	1-163-109-00	CERAMIC CHIP 47PF 5% 50V	(C50:E, EA, AUS, SP, PX)
C764	1-163-109-00	CERAMIC CHIP 47PF 5% 50V	(C50:E, EA, AUS, SP, PX)
C765	1-124-927-11	ELECT 4.7uF 20% 100V	(C50:E, EA, AUS, SP, PX)
		< CONNECTOR >	
CN610	1-695-376-21	PIN, CONNECTOR (PC BOARD) 15P	
CN611	1-695-338-11	PIN, CONNECTOR (PC BOARD) 15P	
		< IC >	
IC603	8-759-636-55	IC M5218AFP	(C50:E, EA, AUS, SP, PX)
IC604	8-759-008-67	IC MC14066BF	(C50:E, EA, AUS, SP, PX)
		< TRANSISTOR >	
Q712	8-729-900-63	TRANSISTOR DTA124ES	(C50:E, EA, AUS, SP, PX)
		< RESISTOR >	
R711	1-216-097-00	METAL CHIP 100K 5% 1/10W	(C50:E, EA, AUS, SP, PX)
R712	1-216-089-91	METAL GLAZE 47K 5% 1/10W	(C50:E, EA, AUS, SP, PX)
R713	1-216-089-91	METAL GLAZE 47K 5% 1/10W	(C50:E, EA, AUS, SP, PX)
R714	1-216-089-91	METAL GLAZE 47K 5% 1/10W	(C50:E, EA, AUS, SP, PX)
R715	1-216-689-11	METAL CHIP 39K 0.5% 1/10W	(C50:E, EA, AUS, SP, PX)
R716	1-216-097-00	METAL CHIP 100K 5% 1/10W	(C50:E, EA, AUS, SP, PX)
R722	1-216-089-91	METAL GLAZE 47K 5% 1/10W	(C50:E, EA, AUS, SP, PX)
R761	1-216-097-00	METAL CHIP 100K 5% 1/10W	(C50:E, EA, AUS, SP, PX)
R762	1-216-089-91	METAL GLAZE 47K 5% 1/10W	(C50:E, EA, AUS, SP, PX)
R763	1-216-089-91	METAL GLAZE 47K 5% 1/10W	(C50:E, EA, AUS, SP, PX)
R764	1-216-089-91	METAL GLAZE 47K 5% 1/10W	(C50:E, EA, AUS, SP, PX)
R765	1-216-689-11	METAL CHIP 39K 0.5% 1/10W	(C50:E, EA, AUS, SP, PX)
R766	1-216-097-00	METAL CHIP 100K 5% 1/10W	(C50:E, EA, AUS, SP, PX)

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Ref. No.	Part No.	Description	Remark
*	1-644-686-21	LEAF SWITCH BOARD (A, B) (C50U) ****************************	
		< CAPACITOR >	
C1001	1-164-159-11	CERAMIC 0.1uF 50V	
		< CONNECTOR >	
* CN1001	1-568-856-11	SOCKET, CONNECTOR 13P	
CN1002	1-564-517-11	PLUG, CONNECTOR 2P	
		< MOTOR >	
M902	A-2004-188-A	MOTOR ASSY, DC (TRIGGER)	
		< TRANSISTOR >	
Q1001	8-719-710-02	TRANSISTOR PHOTO REFLECTOR NJL5165K-A	
Q1002	8-719-710-02	TRANSISTOR PHOTO REFLECTOR NJL5165K-A	
		< RESISTOR >	
R1001	1-249-411-11	CARBON 330 5% 1/4W	
R1002	1-249-411-11	CARBON 330 5% 1/4W	
		< SWITCH >	
S1001	1-572-202-11	SWITCH, LEAF (HALF)	
S1002	1-572-125-11	SWITCH, LEAF (70u/120u)	
S1003	1-572-125-11	SWITCH, LEAF (REC CLAW)	
S1004	1-572-125-11	SWITCH, LEAF (70u/120u)	
S1005	1-572-202-11	SWITCH, LEAF (HALF)	
S1006	1-572-125-11	SWITCH, LEAF (METAL)	

Ref. No.	Part No.	Description				Remark
S1007	1-692-193-11	SWITCH, PUSH (1 KEY)(STOP)				
S1008	1-692-193-11	SWITCH, PUSH (1 KEY)(STOP)				

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*	A-4360-827-A	MAIN BOARD, COMPLETE (C50:CND/C50U) ********************				
*	A-4360-960-A	MAIN BOARD, COMPLETE (C50:IT, G) ********************				
*	A-4360-964-A	MAIN BOARD, COMPLETE (C50:AEP, UK) ********************				
*	A-4360-976-A	MAIN BOARD, COMPLETE ********************				(C50:E, EA, AUS, SP, PX)
*	A-4365-148-A	MAIN BOARD, COMPLETE (C50:EE) ********************				
*	1-690-880-31	LEAD (WITH CONNECTOR)				(C50:AEP, UK, IT, G, EE, E, EA, AUS, SP, PX)
	7-682-548-04	SCREW +BATT 3X8 (S)				
		< CAPACITOR >				
C1	1-101-005-00	CERAMIC	22000PF		50V	
C2	1-124-907-11	ELECT	10uF	20%	50V	
C3	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C4	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C5	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C6	1-164-159-11	CERAMIC	0.1uF		50V	(C50:AEP, UK, EE, E, EA, AUS, SP, PX)
C7	1-162-196-31	CERAMIC	5.6PF	10%	50V	(C50:AEP, UK, EE)
C7	1-162-198-31	CERAMIC	8.2PF	10%	50V	(C50:CND, IT, G, E, EA, AUS, SP, PX/C50U)
C8	1-101-005-00	CERAMIC	22000PF		50V	(C50:AEP, UK, EE)
C8	1-101-006-00	CERAMIC	0.047uF		50V	(C50:E, EA, AUS, SP, PX)
C9	1-162-195-31	CERAMIC	4.7PF	10%	50V	(C50:E, EA, AUS, SP, PX)
C10	1-102-120-00	CERAMIC	0.0018uF	10%	50V	(C50:AEP, UK, EE)
C11	1-161-374-11	CERAMIC	0.0015uF	20%	50V	(C50:AEP, UK, EE)
C12	1-130-492-11	MYLAR	0.056uF	5%	50V	(C50:E, EA, AUS, SP, PX)
C21	1-164-056-11	CERAMIC	27PF	5%	50V	
C22	1-164-056-11	CERAMIC	27PF	5%	50V	
C23	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C24	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C25	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C26	1-124-907-11	ELECT	10uF	20%	50V	
C27	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C29	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C30	1-124-907-11	ELECT	10uF	20%	50V	
C31	1-124-925-11	ELECT	2.2uF	20%	100V	
C32	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C33	1-124-463-00	ELECT	0.1uF	20%	50V	
C34	1-124-902-00	ELECT	0.47uF	20%	50V	(C50:AEP, UK, EE)
C35	1-101-005-00	CERAMIC	22000PF		50V	(C50:AEP, UK, EE)
C36	1-101-005-00	CERAMIC	22000PF		50V	(C50:AEP, UK, EE)
C51	1-124-907-11	ELECT	10uF	20%	50V	
C52	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C53	1-162-282-31	CERAMIC	100PF	10%	50V	
C54	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C55	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C57	1-124-925-11	ELECT	2.2uF	20%	100V	
C58	1-124-903-11	ELECT	1uF	20%	50V	
C59	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C60	1-124-903-11	ELECT	1uF	20%	50V	
C61	1-130-484-00	MYLAR	0.012uF	5%	50V	(C50:AEP, UK, IT, G, EE, E, EA, AUS, SP, PX)
C61	1-130-486-00	MYLAR	0.018uF	10%	50V	(C50:CND/C50U)
C62	1-130-484-00	MYLAR	0.012uF	5%	50V	(C50:AEP, UK, IT, G, EE, E, EA, AUS, SP, PX)
C62	1-130-486-00	MYLAR	0.018uF	10%	50V	(C50:CND/C50U)
C63	1-124-903-11	ELECT	1uF	20%	50V	
C64	1-124-903-11	ELECT	1uF	20%	50V	
C66	1-124-903-11	ELECT	1uF	20%	50V	
C67	1-124-903-11	ELECT	1uF	20%	50V	
C68	1-161-046-00	CERAMIC	0.0039uF	10%	25V	
C69	1-161-046-00	CERAMIC	0.0039uF	10%	25V	
C71	1-162-293-31	CERAMIC	820PF	10%	50V	(C50:IT, G)
C72	1-162-293-31	CERAMIC	820PF	10%	50V	(EXCEPT C50:IT, G)
C73	1-124-903-11	ELECT	1uF	20%	50V	
C75	1-161-377-00	CERAMIC	0.0047uF	30%	16V	
C76	1-124-907-11	ELECT	10uF	20%	50V	(C50:IT, G)
C76	1-124-916-11	ELECT	22uF	20%	63V	(EXCEPT C50:IT, G)
C77	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C78	1-123-382-00	ELECT	3.3uF	20%	100V	
C79	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C80	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C81	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C82	1-162-207-31	CERAMIC	22PF	5%	50V	(C50:AEP, UK, EE)

MAIN

Ref. No.	Part No.	Description	Remark
C92	1-124-907-11	ELECT 10uF 20% 50V	
C93	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C94	1-164-159-11	CERAMIC 0.1uF 50V	
C96	1-124-907-11	ELECT 10uF 20% 50V	
C100	1-162-207-31	CERAMIC 22PF 5% 50V	
C101	1-124-916-11	ELECT 22uF 20% 63V	
C103	1-162-282-11	CERAMIC 100PF 10% 50V	
C104	1-162-282-11	CERAMIC 100PF 10% 50V	
C105	1-162-282-11	CERAMIC 100PF 10% 50V	
C701	1-162-286-31	CERAMIC 220PF 10% 50V	(C50:IT, G)
C706	1-162-282-31	CERAMIC 100PF 10% 50V	(C50:IT, G)
C721	1-162-215-31	CERAMIC 47PF 5% 50V	
C727	1-124-925-11	ELECT 2.2uF 20% 100V	
C731	1-124-927-11	ELECT 4.7uF 20% 100V	
C732	1-164-159-11	CERAMIC 0.1uF 50V	
C733	1-124-927-11	ELECT 4.7uF 20% 100V	
C734	1-162-215-31	CERAMIC 47PF 5% 50V	
C735	1-124-252-00	ELECT 0.33uF 20% 50V	
C736	1-124-902-00	ELECT 0.47uF 20% 50V	
C737	1-124-903-11	ELECT 1uF 20% 50V	
C740	1-124-477-11	ELECT 47uF 20% 25V	
C741	1-130-493-00	MYLAR 0.068uF 5% 50V	
C742	1-130-484-00	MYLAR 0.012uF 5% 50V	
C743	1-106-353-00	MYLAR 0.0027uF 5% 50V	
C744	1-130-487-00	MYLAR 0.022uF 5% 50V	
C745	1-124-927-11	ELECT 4.7uF 20% 100V	
C746	1-124-907-11	ELECT 10uF 20% 50V	
C747	1-124-927-11	ELECT 4.7uF 20% 100V	
C751	1-162-286-31	CERAMIC 220PF 10% 50V	(C50:IT, G)
C756	1-162-282-31	CERAMIC 100PF 10% 50V	(C50:IT, G)
C771	1-162-215-31	CERAMIC 47PF 5% 50V	
C781	1-124-927-11	ELECT 4.7uF 20% 100V	
C783	1-124-927-11	ELECT 4.7uF 20% 100V	
C784	1-162-215-31	CERAMIC 47PF 5% 50V	
C785	1-124-252-00	ELECT 0.33uF 20% 50V	
C786	1-124-902-00	ELECT 0.47uF 20% 50V	
C790	1-124-477-11	ELECT 47uF 20% 25V	
C791	1-130-493-00	MYLAR 0.068uF 5% 50V	
C792	1-130-484-00	MYLAR 0.012uF 5% 50V	
C793	1-106-353-00	MYLAR 0.0027uF 5% 50V	
C794	1-130-487-00	MYLAR 0.022uF 5% 50V	
C795	1-124-927-11	ELECT 4.7uF 20% 100V	
C801	1-162-286-31	CERAMIC 220PF 10% 50V	(C50:AEP, UK, IT, G, EE)
C802	1-162-286-31	CERAMIC 220PF 10% 50V	(C50:AEP, UK, IT, G, EE)
C803	1-124-927-11	ELECT 4.7uF 20% 100V	(C50:AEP, UK, IT, G, EE)
C804	1-102-126-00	CERAMIC 0.0056uF 10% 50V	(C50:AEP, UK, IT, G, EE)
C805	1-102-119-00	CERAMIC 1500PF 10% 50V	(C50:AEP, UK, IT, G, EE)
C806	1-124-903-11	ELECT 1uF 20% 50V	(C50:AEP, UK, IT, G, EE)
C807	1-162-282-31	CERAMIC 100PF 10% 50V	(C50:IT, G)
C821	1-162-286-31	CERAMIC 220PF 10% 50V	(C50:AEP, UK, IT, G, EE)
C822	1-162-286-31	CERAMIC 220PF 10% 50V	(C50:AEP, UK, IT, G, EE)
C823	1-124-927-11	ELECT 4.7uF 20% 100V	(C50:AEP, UK, IT, G, EE)
C824	1-102-126-00	CERAMIC 0.0056uF 10% 50V	(C50:AEP, UK, IT, G, EE)
C825	1-102-119-00	CERAMIC 1500PF 10% 50V	(C50:AEP, UK, IT, G, EE)
C826	1-124-903-11	ELECT 1uF 20% 50V	(C50:AEP, UK, IT, G, EE)
C827	1-162-282-31	CERAMIC 100PF 10% 50V	(C50:IT, G)
C841	1-124-477-11	ELECT 47uF 20% 25V	
C842	1-124-122-11	ELECT 100uF 20% 50V	

< FILTER >

Ref. No.	Part No.	Description	Remark
CF1	1-567-389-11	FILTER, CERAMIC	
CF2	1-567-389-11	FILTER, CERAMIC	(C50:IT, G)
CF51	1-567-389-11	FILTER, CERAMIC	

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN701	1-750-180-11	PIN, CONNECTOR (PC BOARD) 5P	
CN702	1-695-089-11	PIN, CONNECTOR (PC BOARD) 11P	
CN703	1-695-087-11	PIN, CONNECTOR (PC BOARD) 7P	
CN704	1-691-644-11	SOCKET, CONNECTOR 7P	
CN705	1-564-511-11	PLUG, CONNECTOR 8P	(C50:E, EA, AUS, SP, PX)
* CN707	1-564-505-11	PLUG, CONNECTOR 2P	(C50:AEP, UK, IT, G, EE, E, EA, AUS, SP, PX)
CN750	1-564-505-11	PLUG, CONNECTOR 2P	(C50:AEP, UK, IT, G, EE)
CN751	1-564-506-11	PLUG, CONNECTOR 3P	(C50:AEP, UK, IT, G, EE)
CN801	1-695-342-31	PIN, CONNECTOR (PC BOARD) 19P	
* CN802	1-565-561-11	PIN, CONNECTOR 3P (AU BUS)	

< VARIABLE CAPACITOR >

Ref. No.	Part No.	Description	Remark
CV1	1-141-227-00	CAP, TRIMMER 20PF	(C50:E, EA, AUS, SP, PX)
CV2	1-141-227-00	CAP, TRIMMER 20PF	(C50:E, EA, AUS, SP, PX)

< DIODE >

Ref. No.	Part No.	Description	Remark
D1	8-719-976-30	DIODE KV1560N	(C50:E, EA, AUS, SP, PX)
D21	8-719-933-33	DIODE HZS6A1L	
D51	8-719-987-63	DIODE 1N4148M	

Ref. No.	Part No.	Description	Remark
D703	8-719-987-63	DIODE 1N4148M	
D704	8-719-987-63	DIODE 1N4148M	
D705	8-719-987-63	DIODE 1N4148M	
D841	8-719-987-63	DIODE 1N4148M	
D861	8-719-987-63	DIODE 1N4148M	
D862	8-719-987-63	DIODE 1N4148M	
		< FRONTEND >	
FE1	1-465-007-11	FRONT END (FM) (4 GANG)	(C50:IT, G)
FE1	1-465-396-11	FRONT END (3 GANG)	(C50:EE)
FE1	1-465-673-11	FRONT END (2 BAND)	(C50:CND, AEP, UK, E, EA, AUS, SP, PX/C50U)
FE2	1-239-261-12	ENCAPSULATED COMPONENT	(C50:AEP, UK, EE)
FE2	1-239-262-11	ENCAPSULATED COMPONENT	(C50:E, EA, AUS, SP, PX)
FE2	1-239-634-11	ENCAPSULATED COMPONENT, AM. RF	(C50:CND, IT, G/C50U)
FE3	1-236-463-11	ENCAPSULATED COMPONENT	(C50:AEP, UK, EE)
		< IC >	
IC21	8-759-820-91	IC LC7218	
IC51	8-759-090-40	IC LA1831	
IC701	8-759-000-48	IC MC14052BCP	
IC702	8-759-634-50	IC M5218AL	
IC703	8-759-000-49	IC uPD4066BC	
IC704	8-759-634-50	IC M5218AL	
IC705	8-759-072-32	IC TC9184P	
IC706	8-759-634-50	IC M5218AL	
IC801	8-759-634-51	IC M5218AP	(C50:AEP, UK, IT, G, EE)
IC802	8-759-000-49	IC uPD4066BC	(C50:AEP, UK, IT, G, EE)
IC841	8-759-635-31	IC M50253P	
		< IFT >	
IFT51	1-404-713-11	TRANSFORMER, IF	
		< JACK >	
J701	1-569-181-11	JACK, PIN 2P (MD/PHONO IN)	
J702	1-569-181-11	JACK, PIN 2P (MD PHONO OUT)	
		< COIL >	
L1	1-408-425-00	INDUCTOR 220uH	(C50:AEP, UK, EE)
L21	1-410-521-11	INDUCTOR 100uH	
L51	1-408-399-00	INDUCTOR 1.5uH	
		< FILTER >	
LPF51	1-239-597-11	FILTER, LOW PASS	
LPF52	1-239-597-11	FILTER, LOW PASS	

Ref. No.	Part No.	Description	Remark
		< TRANSISTOR >	
Q1	8-729-620-19	TRANSISTOR 2SC2724-CD	
Q2	8-729-620-19	TRANSISTOR 2SC2724-CD	(C50:IT, G)
Q3	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q4	8-729-119-76	TRANSISTOR 2SA1175-HFE	(C50:AEP, UK, EE, E, EA, AUS, SP, PX)
Q5	8-729-119-76	TRANSISTOR 2SA1175-HFE	(C50:AEP, UK, EE, E, EA, AUS, SP, PX)
Q6	8-729-900-36	TRANSISTOR DTC124ES	(C50:AEP, UK, EE, E, EA, AUS, SP, PX)
Q7	8-729-900-36	TRANSISTOR DTC124ES	(C50:AEP, UK, EE, E, EA, AUS, SP, PX)
Q8	8-729-900-36	TRANSISTOR DTC124ES	(C50:AEP, UK, EE, E, EA, AUS, SP, PX)
Q9	8-729-620-05	TRANSISTOR 2SC2603-EF	(C50:AEP, UK, EE, E, EA, AUS, SP, PX)
Q21	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q22	8-729-201-83	TRANSISTOR 2SC3112-A	
Q23	8-729-202-67	TRANSISTOR 2SK246-GR3	(C50:AEP, UK, EE)
Q24	8-729-201-83	TRANSISTOR 2SC3112-A	(C50:AEP, UK, EE)
Q51	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q52	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q53	8-729-900-36	TRANSISTOR DTC124ES	
Q701	8-729-900-63	TRANSISTOR DTA124ES	
Q702	8-729-900-36	TRANSISTOR DTC124ES	
Q731	8-729-224-61	TRANSISTOR 2SK246-Y	
Q732	8-729-224-61	TRANSISTOR 2SK246-Y	
Q733	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q741	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q782	8-729-224-61	TRANSISTOR 2SK246-Y	
Q783	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q791	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q841	8-729-900-63	TRANSISTOR DTA124ES	
Q842	8-729-900-63	TRANSISTOR DTA124ES	
Q843	8-729-900-63	TRANSISTOR DTA124ES	
		< RESISTOR >	
R1	1-249-411-11	CARBON 330 5% 1/4W	
R2	1-249-411-11	CARBON 330 5% 1/4W	
R3	1-247-891-00	CARBON 330K 5% 1/4W	
R4	1-249-411-11	CARBON 330 5% 1/4W	
R5	1-247-891-00	CARBON 330K 5% 1/4W	(C50:IT, G)
R6	1-249-411-11	CARBON 330 5% 1/4W	(C50:IT, G)
R7	1-249-402-11	CARBON 56 5% 1/4W F	(C50:IT, G)
R7	1-249-405-11	CARBON 100 5% 1/4W F	(EXCEPT C50:IT, G)
R8	1-249-429-11	CARBON 10K 5% 1/4W	(C50:AEP, UK, EE, E, EA, AUS, SP, PX)

MAIN

Ref. No.	Part No.	Description	Remark
R9	1-249-429-11	CARBON 10K 5% 1/4W	(C50:AEP, UK, EE, E, EA, AUS, SP, PX)
R10	1-249-437-11	CARBON 47K 5% 1/4W	
R11	1-249-437-11	CARBON 47K 5% 1/4W	
R12	1-249-425-11	CARBON 4.7K 5% 1/4W	F (C50:AEP, UK, EE, E, EA, AUS, SP, PX)
R13	1-247-903-00	CARBON 1M 5% 1/4W	(C50:E, EA, AUS, SP, PX)
R13	1-249-437-11	CARBON 47K 5% 1/4W	(C50:AEP, UK, EE)
R14	1-249-437-11	CARBON 47K 5% 1/4W	(C50:E, EA, AUS, SP, PX)
R14	1-249-429-11	CARBON 10K 5% 1/4W	(C50:AEP, UK, EE)
R15	1-249-429-11	CARBON 10K 5% 1/4W	(C50:AEP, UK, EE, E, EA, AUS, SP, PX)
R17	1-247-903-00	CARBON 1M 5% 1/4W	(C50:AEP, UK, EE)
R18	1-249-429-11	CARBON 10K 5% 1/4W	(C50:AEP, UK, EE, E, EA, AUS, SP, PX)
R19	1-249-429-11	CARBON 10K 5% 1/4W	(C50:AEP, UK, EE, E, EA, AUS, SP, PX)
R20	1-249-417-11	CARBON 1K 5% 1/4W	F
R21	1-249-417-11	CARBON 1K 5% 1/4W	F
R22	1-249-417-11	CARBON 1K 5% 1/4W	F
R23	1-249-417-11	CARBON 1K 5% 1/4W	F
R24	1-249-405-11	CARBON 100 5% 1/4W	F
R25	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R26	1-249-417-11	CARBON 1K 5% 1/4W	F
R27	1-249-405-11	CARBON 100 5% 1/4W	F
R28	1-249-405-11	CARBON 100 5% 1/4W	F
R30	1-249-423-11	CARBON 3.3K 5% 1/4W	F
R31	1-249-414-11	CARBON 560 5% 1/4W	F
R32	1-249-417-11	CARBON 1K 5% 1/4W	F
R33	1-249-410-11	CARBON 270 5% 1/4W	F
R34	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R35	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R36	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R37	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R38	1-249-405-11	CARBON 100 5% 1/4W	F
R39	1-249-423-11	CARBON 3.3K 5% 1/4W	F (C50:AEP, UK, EE)
R40	1-249-414-11	CARBON 560 5% 1/4W	F (C50:AEP, UK, EE)
R41	1-249-417-11	CARBON 1K 5% 1/4W	F (C50:AEP, UK, EE)
R42	1-249-410-11	CARBON 270 5% 1/4W	F (C50:AEP, UK, EE)
R43	1-249-433-11	CARBON 22K 5% 1/4W	(C50:AEP, UK, EE)
R44	1-249-421-11	CARBON 2.2K 5% 1/4W	F (C50:AEP, UK, EE)
R45	1-249-425-11	CARBON 4.7K 5% 1/4W	F (C50:AEP, UK, EE)
R46	1-249-425-11	CARBON 4.7K 5% 1/4W	F (C50:AEP, UK, EE)
R47	1-249-417-11	CARBON 1K 5% 1/4W	F (C50:AEP, UK, EE, E, EA, AUS, SP, PX)
R51	1-249-423-11	CARBON 3.3K 5% 1/4W	F
R52	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R53	1-249-412-11	CARBON 390 5% 1/4W	F
R54	1-247-870-11	CARBON 43K 5% 1/4W	
R55	1-249-429-11	CARBON 10K 5% 1/4W	
R56	1-247-842-11	CARBON 3K 5% 1/4W	
R57	1-249-429-11	CARBON 10K 5% 1/4W	
R58	1-249-437-11	CARBON 47K 5% 1/4W	
R59	1-249-417-11	CARBON 1K 5% 1/4W	F
R60	1-249-417-11	CARBON 1K 5% 1/4W	F
R61	1-247-891-00	CARBON 330K 5% 1/4W	
R62	1-247-891-00	CARBON 330K 5% 1/4W	
R63	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R64	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R66	1-249-395-11	CARBON 15 5% 1/4W	F (C50:E, EA, AUS, SP, PX)
R69	1-249-399-11	CARBON 33 5% 1/4W	F
R70	1-249-417-11	CARBON 1K 5% 1/4W	F (C50:AEP, UK, EE)
⚠R91	1-247-696-11	CARBON 47 5% 1/4W	
R92	1-249-405-11	CARBON 100 5% 1/4W	F
R100	1-249-429-11	CARBON 10K 5% 1/4W	
R101	1-249-429-11	CARBON 10K 5% 1/4W	
R102	1-249-417-11	CARBON 1K 5% 1/4W	F
R103	1-249-417-11	CARBON 1K 5% 1/4W	F
R104	1-249-417-11	CARBON 1K 5% 1/4W	F
R701	1-249-417-11	CARBON 1K 5% 1/4W	F
R702	1-247-868-11	CARBON 36K 5% 1/4W	
R703	1-249-429-11	CARBON 10K 5% 1/4W	
R704	1-249-429-11	CARBON 10K 5% 1/4W	
R705	1-249-437-11	CARBON 47K 5% 1/4W	
R706	1-249-417-11	CARBON 1K 5% 1/4W	F
R708	1-249-441-11	CARBON 100K 5% 1/4W	(C50:AEP, UK, IT, G, EE)
R709	1-249-441-11	CARBON 100K 5% 1/4W	
R710	1-249-429-11	CARBON 10K 5% 1/4W	
R711	1-249-417-11	CARBON 1K 5% 1/4W	F
R717	1-249-417-11	CARBON 1K 5% 1/4W	F
R723	1-249-429-11	CARBON 10K 5% 1/4W	
R724	1-247-858-11	CARBON 13K 5% 1/4W	
R725	1-249-429-11	CARBON 10K 5% 1/4W	(C50:AEP, UK, IT, G, EE, E, EA, AUS, SP, PX)
R726	1-247-842-11	CARBON 3K 5% 1/4W	
R727	1-249-441-11	CARBON 100K 5% 1/4W	
R729	1-249-433-11	CARBON 22K 5% 1/4W	
R730	1-249-429-11	CARBON 10K 5% 1/4W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
R731	1-249-420-11	CARBON 1.8K 5% 1/4W	F (C50:CND/C50U)
R731	1-249-421-11	CARBON 2.2K 5% 1/4W	F (C50:AEP, UK, IT, G, EE, E, EA, AUS, SP, PX)
R732	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R733	1-249-440-11	CARBON 82K 5% 1/4W	
R734	1-247-895-00	CARBON 470K 5% 1/4W	
R735	1-249-414-11	CARBON 560 5% 1/4W	F
R736	1-249-441-11	CARBON 100K 5% 1/4W	
R737	1-249-439-11	CARBON 68K 5% 1/4W	
R738	1-249-411-11	CARBON 330 5% 1/4W	
R739	1-249-423-11	CARBON 3.3K 5% 1/4W	F
R741	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R742	1-249-436-11	CARBON 39K 5% 1/4W	
R743	1-247-897-11	CARBON 560K 5% 1/4W	
R744	1-249-434-11	CARBON 27K 5% 1/4W	
R745	1-249-426-11	CARBON 5.6K 5% 1/4W	
R746	1-249-418-11	CARBON 1.2K 5% 1/4W	F
R747	1-249-441-11	CARBON 100K 5% 1/4W	
R748	1-249-423-11	CARBON 3.3K 5% 1/4W	F
R749	1-247-823-11	CARBON 470 5% 1/4W	F
R751	1-249-417-11	CARBON 1K 5% 1/4W	F
R752	1-247-868-11	CARBON 36K 5% 1/4W	
R756	1-249-417-11	CARBON 1K 5% 1/4W	F
R760	1-249-429-11	CARBON 10K 5% 1/4W	
R761	1-249-417-11	CARBON 1K 5% 1/4W	F
R767	1-249-417-11	CARBON 1K 5% 1/4W	F
R773	1-249-429-11	CARBON 10K 5% 1/4W	
R774	1-247-858-11	CARBON 13K 5% 1/4W	
R775	1-249-429-11	CARBON 10K 5% 1/4W	(C50:AEP, UK, IT, G, EE, E, EA, AUS, SP, PX)
R776	1-247-842-11	CARBON 3K 5% 1/4W	
R779	1-249-433-11	CARBON 22K 5% 1/4W	
R780	1-249-429-11	CARBON 10K 5% 1/4W	
R781	1-249-420-11	CARBON 1.8K 5% 1/4W	F (C50:CND/C50U)
R781	1-249-421-11	CARBON 2.2K 5% 1/4W	F (C50:AEP, UK, IT, G, EE, E, EA, AUS, SP, PX)
R782	1-247-903-00	CARBON 1M 5% 1/4W	
R783	1-249-440-11	CARBON 82K 5% 1/4W	
R784	1-247-895-00	CARBON 470K 5% 1/4W	
R785	1-249-414-11	CARBON 560 5% 1/4W	F
R786	1-249-441-11	CARBON 100K 5% 1/4W	
R787	1-249-439-11	CARBON 68K 5% 1/4W	
R788	1-249-411-11	CARBON 330 5% 1/4W	
R789	1-249-423-11	CARBON 3.3K 5% 1/4W	F
R791	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R792	1-249-436-11	CARBON 39K 5% 1/4W	
R793	1-247-897-11	CARBON 560K 5% 1/4W	
R794	1-249-434-11	CARBON 27K 5% 1/4W	
R795	1-249-426-11	CARBON 5.6K 5% 1/4W	
R796	1-249-418-11	CARBON 1.2K 5% 1/4W	F
R797	1-249-441-11	CARBON 100K 5% 1/4W	
R798	1-249-423-11	CARBON 3.3K 5% 1/4W	F
R801	1-249-411-11	CARBON 330 5% 1/4W	(C50:AEP, UK, IT, G, EE)
R802	1-249-433-11	CARBON 22K 5% 1/4W	(C50:AEP, UK, IT, G, EE)
R803	1-249-417-11	CARBON 1K 5% 1/4W	F (C50:AEP, UK, IT, G, EE)
R804	1-247-897-11	CARBON 560K 5% 1/4W	(C50:AEP, UK, IT, G, EE)
R805	1-249-437-11	CARBON 47K 5% 1/4W	(C50:AEP, UK, IT, G, EE)
R806	1-249-430-11	CARBON 12K 5% 1/4W	(C50:AEP, UK, IT, G, EE)
R821	1-249-411-11	CARBON 330 5% 1/4W	(C50:AEP, UK, IT, G, EE)
R822	1-249-433-11	CARBON 22K 5% 1/4W	(C50:AEP, UK, IT, G, EE)
R823	1-249-417-11	CARBON 1K 5% 1/4W	F (C50:AEP, UK, IT, G, EE)
R824	1-247-897-11	CARBON 560K 5% 1/4W	(C50:AEP, UK, IT, G, EE)
R825	1-249-437-11	CARBON 47K 5% 1/4W	(C50:AEP, UK, IT, G, EE)
R826	1-249-430-11	CARBON 12K 5% 1/4W	(C50:AEP, UK, IT, G, EE)
R841	1-249-437-11	CARBON 47K 5% 1/4W	
R842	1-249-437-11	CARBON 47K 5% 1/4W	
R843	1-249-437-11	CARBON 47K 5% 1/4W	
R850	1-249-405-11	CARBON 100 5% 1/4W	F
R851	1-249-417-11	CARBON 1K 5% 1/4W	F
R852	1-249-437-11	CARBON 47K 5% 1/4W	
R853	1-249-441-11	CARBON 100K 5% 1/4W	
R857	1-249-417-11	CARBON 1K 5% 1/4W	F

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV51	1-241-631-21	RES, ADJ, CARBON 22K	

< TRANSFORMER >

Ref. No.	Part No.	Description	Remark
T1	1-402-424-11	COIL (ANT, SW3) (C50:E, EA, AUS, SP, PX)	
T2	1-402-960-11	COIL (OSC SW3) (C50:E, EA, AUS, SP, PX)	
T51	1-236-465-11	ENCAPSULATED COMPONENT (C50:IT, G)	

< TERMINAL >

Ref. No.	Part No.	Description	Remark
TB1	1-537-238-21	TERMINAL BOARD (ANTENNA)	(C50:CND, E, EA, AUS, SP, PX/C50U)
TB1	1-537-488-11	TERMINAL BOARD (ANTENNA)	(C50:AEP, UK, IT, G, EE)

< VIBRATOR >

Ref. No.	Part No.	Description	Remark
X21	1-577-126-21	VIBRATOR, CRYSTAL (7.2MHz)	

Ref. No.	Part No.	Description	Remark
X51	1-579-777-11	DISCRIMINATOR, CERAMIC (10.7MHz)	
X52	1-577-075-11	OSCILLATOR, CERAMIC (456kHz)	

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*	A-2006-399-A	MD-A BOARD COMPLETE (C50)	

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< CAPACITOR >

Ref. No.	Part No.	Description	Value	Tol.	Rating
C11	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C12	1-136-157-00	FILM	0.022uF	5%	50V
C13	1-124-234-00	ELECT	22uF	20%	16V
C18	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C21	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C22	1-136-157-00	FILM	0.022uF	5%	50V
C23	1-124-234-00	ELECT	22uF	20%	16V
C28	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C31	1-124-234-00	ELECT	22uF	20%	16V
C32	1-124-234-00	ELECT	22uF	20%	16V
C72	1-124-499-11	ELECT, NONPOLAR	1uF	20%	50V

< CONNECTOR >

Ref. No.	Part No.	Description
* CNJ31	1-580-782-11	CONNECTOR, BOARD TO BOARD 10P
* CNJ72	1-580-411-11	SOCKET, CONNECTOR 4P
* CNP32	1-580-772-11	PIN, CONNECTOR (PC BOARD) 4P
* CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P

< HEAD >

Ref. No.	Part No.	Description
HP101	A-2003-837-F	DECK ASSY, HEAD (DECK A)

< IC >

Ref. No.	Part No.	Description
IC31A	8-759-106-02	IC uPC4570G2

< JUMPER RESISTOR >

Ref. No.	Part No.	Description	Value	Tol.	Rating
JW1	1-216-295-00	METAL CHIP	0	5%	1/10W
JW51	1-216-296-00	METAL CHIP	0	5%	1/8W
JW52	1-216-296-00	METAL CHIP	0	5%	1/8W
JW53	1-216-296-00	METAL CHIP	0	5%	1/8W
JW54	1-216-296-00	METAL CHIP	0	5%	1/8W

< MOTOR >

Ref. No.	Part No.	Description
M101A	X-3363-501-1	MOTOR, REEL ASSY (DECK A)
M102A	X-3365-377-1	MOTOR, CAPSTAN ASSY (DECK A)

< TRANSISTOR >

Ref. No.	Part No.	Description
Q71A	8-729-602-36	TRANSISTOR 2SA1602

< RESISTOR >

Ref. No.	Part No.	Description	Value	Tol.	Rating
R11	1-216-099-00	METAL CHIP	120K	5%	1/10W
R12	1-216-025-00	METAL CHIP	100	5%	1/10W
R13	1-216-100-00	METAL GLAZE	130K	5%	1/10W
R14	1-216-067-91	METAL GLAZE	5.6K	5%	1/10W
R21	1-216-099-00	METAL CHIP	120K	5%	1/10W
R22	1-216-025-00	METAL CHIP	100	5%	1/10W
R23	1-216-100-00	METAL GLAZE	130K	5%	1/10W
R24	1-216-067-91	METAL GLAZE	5.6K	5%	1/10W
R31	1-216-033-00	METAL CHIP	220	5%	1/10W
R32	1-216-033-00	METAL CHIP	220	5%	1/10W
R71	1-216-082-00	METAL GLAZE	24K	5%	1/10W
R72	1-216-081-00	METAL CHIP	22K	5%	1/10W
R73	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R74	1-216-089-91	METAL GLAZE	47K	5%	1/10W

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description
RV11A	1-241-627-21	RES, ADJ, CARBON 1K
RV21A	1-241-627-21	RES, ADJ, CARBON 1K
RV71A	1-241-630-21	RES, ADJ, CARBON 10K
RV72A	1-241-630-21	RES, ADJ, CARBON 10K

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*	A-2006-400-A	MD-B BOARD COMPLETE (C50)	

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< CAPACITOR >

Ref. No.	Part No.	Description	Value	Tol.	Rating
C11	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C12	1-136-157-00	FILM	0.022uF	5%	50V
C13	1-124-234-00	ELECT	22uF	20%	16V
C14	1-136-273-91	FILM	75PF	5%	630V
C15	1-164-080-11	CERAMIC	390PF	10%	50V
C17	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C18	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C21	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C22	1-136-157-00	FILM	0.022uF	5%	50V
C23	1-124-234-00	ELECT	22uF	20%	16V
C24	1-136-273-91	FILM	75PF	5%	630V
C25	1-164-080-11	CERAMIC	390PF	10%	50V
C27	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C28	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C31	1-124-234-00	ELECT	22uF	20%	16V
C32	1-124-234-00	ELECT	22uF	20%	16V
C33	1-124-234-00	ELECT	22uF	20%	16V
C51	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C52	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C53	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V
C54	1-136-559-11	FILM	0.0047uF	5%	630V
C56	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C57	1-164-346-11	CERAMIC CHIP	1uF		16V
C58	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C72	1-124-499-11	ELECT, NONPOLAR	1uF	20%	50V

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
* CNJ31	1-580-782-11	CONNECTOR, BOARD TO BOARD 10P	
* CNJ33	1-580-782-11	CONNECTOR, BOARD TO BOARD 10P	
* CNJ72	1-580-411-11	SOCKET, CONNECTOR 4P	
* CNP32	1-580-781-11	PIN, CONNECTOR (PC BOARD) 7P	
* CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P	
		< DIODE >	
D31	8-719-016-74	DIODE 1SS352	
		< HEAD >	
HRPE101	A-2003-838-F	DECK ASSY, HEAD (DECK B)	
		< IC >	
IC31B	8-759-106-02	IC uPC4570G2	
		< JUMPER RESISTOR >	
JW1	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW2	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW3	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW4	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW6	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW7	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW52	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW53	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW54	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW55	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW56	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW57	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW58	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW59	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW60	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW61	1-216-296-00	METAL CHIP 0 5% 1/8W	
		< COIL >	
L11	1-410-780-11	INDUCTOR 27mH	
L21	1-410-780-11	INDUCTOR 27mH	
		< MOTOR >	
M101B	X-3363-501-1	MOTOR, REEL ASSY (DECK B)	
M102B	X-3365-377-1	MOTOR, CAPSTAN ASSY (DECK B)	
		< TRANSISTOR >	
Q51	8-729-808-01	TRANSISTOR 2SD1622-S	
Q52	8-729-808-01	TRANSISTOR 2SD1622-S	
Q53	8-729-808-01	TRANSISTOR 2SD1622-S	
Q71B	8-729-602-36	TRANSISTOR 2SA1602	

Ref. No.	Part No.	Description	Remark
		< RESISTOR >	
R11	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R12	1-216-025-00	METAL CHIP 100 5% 1/10W	
R13	1-216-100-00	METAL GLAZE 130K 5% 1/10W	
R14	1-216-067-91	METAL GLAZE 5.6K 5% 1/10W	
⚠R15	1-249-430-11	CARBON 12K 5% 1/4W	
R21	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R22	1-216-025-00	METAL CHIP 100 5% 1/10W	
R23	1-216-100-00	METAL GLAZE 130K 5% 1/10W	
R24	1-216-067-91	METAL GLAZE 5.6K 5% 1/10W	
⚠R25	1-249-430-11	CARBON 12K 5% 1/4W	
R31	1-216-033-00	METAL CHIP 220 5% 1/10W	
R32	1-216-033-00	METAL CHIP 220 5% 1/10W	
⚠R41	1-249-393-11	CARBON 10 5% 1/4W	F
⚠R42	1-249-393-11	CARBON 10 5% 1/4W	F
R51	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R52	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R53	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R54	1-216-309-00	METAL CHIP 5.6 5% 1/10W	
R55	1-216-309-00	METAL CHIP 5.6 5% 1/10W	
R56	1-216-298-00	METAL CHIP 2.2 5% 1/10W	
R71	1-216-082-00	METAL GLAZE 24K 5% 1/10W	
R72	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R73	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R74	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
		< VARIABLE RESISTOR >	
RV11B	1-241-627-21	RES, ADJ, CARBON 1K	
RV12	1-238-551-11	RES, ADJ, CARBON 220K	
RV21B	1-241-627-21	RES, ADJ, CARBON 1K	
RV22	1-238-551-11	RES, ADJ, CARBON 220K	
RV71B	1-241-630-21	RES, ADJ, CARBON 10K	
RV72B	1-241-630-21	RES, ADJ, CARBON 10K	
		< RELAY >	
RY31	1-515-913-11	RELAY	
		< TRANSFORMER >	
T51	1-406-419-11	COIL, BIAS OSCILLATION	

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Ref. No.	Part No.	Description	Remark
*	1-648-415-11	MIC BOARD ********* (C50:AEP, UK, IT, G, EE, E, EA, AUS, SP, PX)	
		< CAPACITOR >	
C831	1-162-282-31	CERAMIC 100PF 10% 50V	
C832	1-126-301-11	ELECT 1uF 20% 50V	
C833	1-162-282-31	CERAMIC 100PF 10% 50V	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

MIC POWER

Ref. No.	Part No.	Description				Remark
C834	1-162-282-31	CERAMIC	100PF	10%	50V	
C835	1-162-282-31	CERAMIC	100PF	10%	50V	
C836	1-126-301-11	ELECT	1uF	20%	50V	
C865	1-124-589-11	ELECT	47uF	20%	16V	
C866	1-124-589-11	ELECT	47uF	20%	16V	
C867	1-164-159-11	CERAMIC	0.1uF		50V	
		< CONNECTOR >				
* CN831	1-564-519-11	PLUG, CONNECTOR 4P				
		< IC >				
IC831	8-759-634-50	IC M5218AL				
		< JACK >				
J831	1-750-032-11	JACK (DIA. 3.5)(MIC)				
		< RESISTOR >				
R831	1-249-429-11	CARBON	10K	5%	1/4W	
R833	1-249-412-11	CARBON	390	5%	1/4W	F
R834	1-249-441-11	CARBON	100K	5%	1/4W	
R835	1-249-441-11	CARBON	100K	5%	1/4W	
R854	1-249-409-11	CARBON	220	5%	1/4W	F
R855	1-249-409-11	CARBON	220	5%	1/4W	F
R856	1-249-417-11	CARBON	1K	5%	1/4W	F
		< VARIABLE RESISTOR >				
RV831	1-223-434-11	RES, VAR, CARBON 50K (MIC LEVEL)				

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Ref. No.	Part No.	Description				Remark
*	A-4360-826-A	POWER BOARD, COMPLETE (C50U) *********************				
*	A-4360-963-A	POWER BOARD, COMPLETE ********************* (C50:AEP, UK, IT, G, EE)				
*	A-4360-975-A	POWER BOARD, COMPLETE (C50:E, EA, SP, PX) *********************				
*	A-4360-979-A	POWER BOARD, COMPLETE (C50:CND) *********************				
*	A-4365-709-A	POWER BOARD, COMPLETE (C50:AUS) *********************				
	1-533-233-11	HOLDER, FUSE				
*	4-886-555-00	HEAT SINK				
	7-682-548-04	SCREW +BVTT 3X8 (S)				
		< CAPACITOR >				
C901	1-136-165-00	FILM	0.1uF	5%	50V	
C902	1-136-165-00	FILM	0.1uF	5%	50V	
C903	1-126-974-11	ELECT	3300uF	20%	50V	
C904	1-126-974-11	ELECT	3300uF	20%	50V	
C905	1-124-929-11	ELECT	22uF	20%	100V	
C906	1-124-929-11	ELECT	22uF	20%	100V	
C907	1-124-907-11	ELECT	10uF	20%	50V	
C911	1-124-564-11	ELECT	4700uF	20%	25V	
C912	1-124-564-11	ELECT	4700uF	20%	25V	
C913	1-136-165-00	FILM	0.1uF	5%	50V	
C914	1-136-165-00	FILM	0.1uF	5%	50V	
C915	1-124-927-11	ELECT	4.7uF	20%	100V	
C916	1-124-925-11	ELECT	2.2uF	20%	100V	
C917	1-126-927-11	ELECT	2200uF	20%	10V	
C918	1-126-927-11	ELECT	2200uF	20%	10V	
C919	1-124-604-00	ELECT	330uF	20%	10V	
C921	1-101-005-00	CERAMIC	22000PF		50V	
C922	1-124-604-00	ELECT	330uF	20%	10V	
C923	1-123-382-00	ELECT	3.3uF	20%	100V	
C941	1-124-477-11	ELECT	47uF	20%	25V	
C942	1-124-477-11	ELECT	47uF	20%	25V	
C943	1-124-477-11	ELECT	47uF	20%	25V	
C951	1-124-927-11	ELECT	4.7uF	20%	100V	
C952	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C953	1-124-477-11	ELECT	47uF	20%	25V	
C954	1-162-282-31	CERAMIC	100PF	10%	50V	
C956	1-124-910-11	ELECT	47uF	20%	50V	
C957	1-124-910-11	ELECT	47uF	20%	50V	
C958	1-124-910-11	ELECT	47uF	20%	50V	
C959	1-124-910-11	ELECT	47uF	20%	50V	
C960	1-136-165-00	FILM	0.1uF	5%	50V	
C961	1-136-165-00	FILM	0.1uF	5%	50V	
C962	1-124-903-11	ELECT	1uF	20%	50V	
C971	1-124-927-11	ELECT	4.7uF	20%	100V	
C972	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C973	1-124-477-11	ELECT	47uF	20%	25V	
C974	1-162-282-31	CERAMIC	100PF	10%	50V	
C976	1-124-910-11	ELECT	47uF	20%	50V	
C979	1-124-910-11	ELECT	47uF	20%	50V	
C980	1-136-165-00	FILM	0.1uF	5%	50V	
C981	1-136-165-00	FILM	0.1uF	5%	50V	
C9000	1-164-159-11	CERAMIC	0.1uF		50V	
		< CONNECTOR >				
* CN901	1-564-321-00	PIN, CONNECTOR 2P				
CN911	1-695-336-31	PIN, CONNECTOR (PC BOARD) 13P				
CN912	1-695-094-11	SOCKET, CONNECTOR 11P				
CN913	1-750-179-11	SOCKET, CONNECTOR 5P				
		< DIODE >				
D901	8-719-312-09	DIODE RBA-402				

Ref. No.	Part No.	Description	Remark
D903	8-719-200-82	DIODE 11ES2	
D904	8-719-200-82	DIODE 11ES2	
D905	8-719-934-22	DIODE HZS30-2L	
D906	8-719-014-66	DIODE UZP-5.6B	
D911	8-719-200-82	DIODE 11ES2	
D912	8-719-200-82	DIODE 11ES2	
D913	8-719-200-82	DIODE 11ES2	
D914	8-719-200-82	DIODE 11ES2	
D915	8-719-987-63	DIODE 1N4148M	
D920	8-719-200-82	DIODE 11ES2	
D921	8-719-815-85	DIODE 1S1585	
D922	8-719-987-63	DIODE 1N4148M	
D923	8-719-987-63	DIODE 1N4148M	
D924	8-719-987-63	DIODE 1N4148M	
D941	8-719-001-70	DIODE UZL-12M1	
D942	8-719-815-85	DIODE 1S1585	
D943	8-719-933-33	DIODE HZS6A1L	
		< FUSE >	
⚠F901	1-532-078-00	FUSE T1A (C50:E, EA, AUS, SP, PX)	
⚠F901	1-532-215-00	FUSE T800mA (C50:AEP, UK, IT, G, EE)	
⚠F901	1-576-103-11	FUSE 1.6A (C50:CND/C50U)	
⚠F902	1-532-279-00	FUSE T500mA (C50:E, EA, SP, PX)	
⚠F911	1-532-203-00	FUSE T2A (C50:AEP, UK, IT, G, EE, E, EA, AUS, SP, PX)	
⚠F911	1-576-104-11	FUSE 2A (C50:CND/C50U)	
⚠F912	1-532-203-00	FUSE T2A (C50:AEP, UK, IT, G, EE, E, EA, AUS, SP, PX)	
⚠F912	1-576-104-11	FUSE 2A (C50:CND/C50U)	
		< IC >	
IC911	8-759-602-66	IC M5230L-A	
IC921	8-759-604-35	IC M5F78M05L	
IC951	8-749-900-96	IC STK-4142MK2 (C50:AEP, UK, IT, G, EE)	
IC951	8-749-920-13	IC STK-4132MK2 (C50:CND, E, EA, AUS, SP, PX/C50U)	
		< COIL >	
⚠L901	1-424-485-11	FILTER, LINE (C50:AEP, UK, IT, G, EE)	
		< TRANSISTOR >	
Q901	8-729-141-83	TRANSISTOR 2SA473	
Q913	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q922	8-729-900-36	TRANSISTOR DTC124ES	
Q923	8-729-900-63	TRANSISTOR DTA124ES	
Q924	8-729-900-36	TRANSISTOR DTC124ES	
Q925	8-729-900-63	TRANSISTOR DTA124ES	
Q926	8-729-900-36	TRANSISTOR DTC124ES	
Q941	8-729-209-15	TRANSISTOR 2SD2012	
Q942	8-729-900-36	TRANSISTOR DTC124ES	

Ref. No.	Part No.	Description	Remark
		< TRANSFORMER >	
⚠T901	1-423-710-11	TRANSFORMER, POWER (C50U)	
⚠T901	1-423-711-11	TRANSFORMER, POWER (C50:AEP, IT, G, EE)	
⚠T901	1-423-712-11	TRANSFORMER, POWER (C50:UK)	
⚠T901	1-423-713-11	TRANSFORMER, POWER (C50:E, EA, AUS, PX)	
⚠T901	1-423-752-11	TRANSFORMER, POWER (C50:SP)	
⚠T901	1-423-753-11	TRANSFORMER, POWER (C50:CND)	
		< RESISTOR >	
⚠R901	1-202-725-00	SOLID 3.3M 10% 1/2W (C50:CND/C50U)	
R903	1-212-897-00	FUSIBLE 470 5% 1/4W	F
R904	1-249-426-11	CARBON 5.6K 5% 1/4W	
R910	1-247-903-00	CARBON 1M 5% 1/4W	
R911	1-249-409-11	CARBON 220 5% 1/4W	F
R912	1-249-409-11	CARBON 220 5% 1/4W	F
R913	1-249-433-11	CARBON 22K 5% 1/4W	
R914	1-249-414-11	CARBON 560 5% 1/4W	F
R915	1-249-414-11	CARBON 560 5% 1/4W	F
R916	1-249-431-11	CARBON 15K 5% 1/4W	
R917	1-249-431-11	CARBON 15K 5% 1/4W	
R918	1-249-429-11	CARBON 10K 5% 1/4W	
R919	1-249-423-11	CARBON 3.3K 5% 1/4W	F
R920	1-249-429-11	CARBON 10K 5% 1/4W	
R923	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R924	1-249-429-11	CARBON 10K 5% 1/4W	
R925	1-249-429-11	CARBON 10K 5% 1/4W	
R926	1-249-429-11	CARBON 10K 5% 1/4W	
⚠R941	1-212-986-91	FUSIBLE 150 5% 1/2W	F
R942	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R943	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R951	1-249-417-11	CARBON 1K 5% 1/4W	F
R952	1-249-438-11	CARBON 56K 5% 1/4W	
R953	1-249-418-11	CARBON 1.2K 5% 1/4W	F
R954	1-249-438-11	CARBON 56K 5% 1/4W	
R955	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R956	1-249-421-11	CARBON 2.2K 5% 1/4W	F
⚠R957	1-212-881-11	FUSIBLE 100 5% 1/4W	F
⚠R958	1-212-881-11	FUSIBLE 100 5% 1/4W	F
R959	1-260-099-11	CARBON 1K 5% 1/2W	
R960	1-260-099-11	CARBON 1K 5% 1/2W	
⚠R961	1-212-849-00	FUSIBLE 4.7 5% 1/4W	F
R962	1-260-076-11	CARBON 10 5% 1/2W	
⚠R965	1-212-881-11	FUSIBLE 100 5% 1/4W	F
R971	1-249-417-11	CARBON 1K 5% 1/4W	F
R972	1-249-438-11	CARBON 56K 5% 1/4W	
R973	1-249-418-11	CARBON 1.2K 5% 1/4W	F
R974	1-249-438-11	CARBON 56K 5% 1/4W	
R975	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R976	1-249-421-11	CARBON 2.2K 5% 1/4W	F

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

POWER | SP.TM | SW | SW-A | SW-B | TC MAIN

Ref. No.	Part No.	Description	Remark
R978	1-247-883-00	CARBON 150K 5% 1/4W	
R980	1-249-429-11	CARBON 10K 5% 1/4W	
R982	1-260-076-11	CARBON 10 5% 1/2W	
R985	1-249-417-11	CARBON 1K 5% 1/4W	F
R9000	1-249-429-11	CARBON 10K 5% 1/4W	
		< SWITCH >	
⚠S901	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE (VOLTAGE SELECTOR)(C50:E, EA, SP, PX)	

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Ref. No.	Part No.	Description	Remark
*	1-648-413-11	SP.TM BOARD ***********	
		< CAPACITOR >	
C963	1-164-098-11	CERAMIC 0.047uF 12V	(C50:IT, G)
C983	1-164-098-11	CERAMIC 0.047uF 12V	(C50:IT, G)
		< RESISTOR >	
R963	1-260-076-11	CARBON 10 5% 1/2W	(C50:IT, G)
R983	1-260-076-11	CARBON 10 5% 1/2W	(C50:IT, G)
		< TERMINAL >	
* TB951	1-537-240-21	TERMINAL BOARD (CHECKER PIN)(SPEAKER)	

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Ref. No.	Part No.	Description	Remark
*	1-648-414-11	SW BOARD (C50:AEP, UK, IT, G, EE) ****************************	
		< CONNECTOR >	
* CN711	1-564-518-11	PLUG, CONNECTOR 3P	
		< RESISTOR >	
R707	1-249-425-11	CARBON 4.7K 5% 1/4W	F
		< SWITCH >	
S701	1-554-650-00	SWITCH, SLIDE (INPUT SELECTOR)	

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Ref. No.	Part No.	Description	Remark
*	1-634-841-14	SW-A BOARD (RA12A)(C50) ***********************	
		< CONNECTOR >	
* CNP81	1-568-852-11	SOCKET, CONNECTOR 9P	
		< IC >	
IC81A	8-749-924-10	IC PHONT REFLECTOR NJL5165K-B(H1)	
		< RESISTOR >	
R84	1-249-417-11	CARBON 1K 5% 1/4W	F
R85	1-249-408-11	CARBON 180 5% 1/4W	F
		< SWITCH >	
S81A	1-571-958-11	SWITCH, PUSH (1 KEY)(STOP DET)	
S82A	1-571-281-21	SWITCH, LEAF (Cr02 DET)	
S86A	1-571-281-21	SWITCH, LEAF (HALF DET)	

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Ref. No.	Part No.	Description	Remark
*	1-634-841-14	SW-B BOARD (RB22A)(C50) ***********************	
		< CONNECTOR >	
* CNP81	1-568-852-11	SOCKET, CONNECTOR 9P	
		< IC >	
IC81B	8-749-924-10	IC PHONT REFLECTOR NJL5165K-B(H1)	
		< RESISTOR >	
R81	1-249-414-11	CARBON 560 5% 1/4W	F
R82	1-247-818-11	CARBON 300 5% 1/4W	
R83	1-247-834-11	CARBON 1.3K 5% 1/4W	
R84	1-249-417-11	CARBON 1K 5% 1/4W	F
R85	1-249-408-11	CARBON 180 5% 1/4W	F
		< SWITCH >	
S81B	1-571-958-11	SWITCH, PUSH (1 KEY)(STO DET)	
S82B	1-571-281-21	SWITCH, LEAF (Cr02 DET)	
S83	1-571-281-21	SWITCH, LEAF (METAL DET)	
S84	1-571-281-21	SWITCH, LEAF (ERASE PROOF, SIDE A)	
S85	1-571-281-21	SWITCH, LEAF (ERASE PROOF, SIDE B)	
S86B	1-571-281-21	SWITCH, LEAF (HALF DET)	

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Ref. No.	Part No.	Description	Remark
*	A-4360-972-A	TC MAIN BOARD, COMPLETE (C50) *****************************	
		< CAPACITOR >	
C201	1-130-479-00	MYLAR 0.0047uF 5% 50V	
C202	1-162-291-31	CERAMIC 560PF 10% 50V	
C203	1-136-165-00	FILM 0.1uF 5% 50V	
C204	1-124-907-11	ELECT 10uF 20% 50V	
C205	1-124-903-11	ELECT 1uF 20% 50V	
C206	1-124-902-00	ELECT 0.47uF 20% 50V	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description				Remark
C207	1-124-907-11	ELECT	10uF	20%	50V	
C208	1-161-377-00	CERAMIC	0.0047uF	20%	16V	
C209	1-161-375-00	CERAMIC	0.0022uF	20%	50V	
C210	1-124-902-00	ELECT	0.47uF	20%	50V	
C211	1-124-903-11	ELECT	1uF	20%	50V	
C212	1-124-907-11	ELECT	10uF	20%	50V	
C240	1-124-907-11	ELECT	10uF	20%	50V	
C241	1-124-907-11	ELECT	10uF	20%	50V	
C242	1-124-122-11	ELECT	100uF	20%	50V	
C243	1-124-122-11	ELECT	100uF	20%	50V	
C244	1-124-443-00	ELECT	100uF	20%	10V	
C245	1-124-471-00	ELECT	1000uF	20%	6.3V	
C246	1-126-101-11	ELECT	100uF	20%	16V	
C247	1-126-101-11	ELECT	100uF	20%	16V	
C248	1-126-101-11	ELECT	100uF	20%	16V	
C260	1-126-157-11	ELECT	10uF	20%	16V	
C261	1-124-907-11	ELECT	10uF	20%	50V	
C270	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C271	1-162-290-31	CERAMIC	470PF	10%	50V	
C272	1-162-290-31	CERAMIC	470PF	10%	50V	
C273	1-164-159-11	CERAMIC	0.1uF		50V	
C274	1-164-159-11	CERAMIC	0.1uF		50V	
C275	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C291	1-164-159-11	CERAMIC	0.1uF		50V	
C292	1-126-096-11	ELECT	10uF	20%	35V	
C293	1-162-282-31	CERAMIC	100PF	10%	50V	
C294	1-162-282-31	CERAMIC	100PF	10%	50V	
C295	1-124-925-11	ELECT	2.2uF	20%	100V	
C301	1-130-479-00	MYLAR	0.0047uF	5%	50V	
C302	1-162-291-31	CERAMIC	560PF	10%	50V	
C303	1-136-165-00	FILM	0.1uF	5%	50V	
C304	1-126-096-11	ELECT	10uF	20%	35V	
C305	1-124-903-11	ELECT	1uF	20%	50V	
C306	1-124-465-00	ELECT	0.47uF	20%	50V	
C307	1-126-096-11	ELECT	10uF	20%	35V	
C308	1-124-907-11	ELECT	10uF	20%	50V	
C309	1-164-159-11	CERAMIC	0.1uF		50V	
C311	1-124-903-11	ELECT	1uF	20%	50V	
C312	1-124-907-11	ELECT	10uF	20%	50V	
		< CONNECTOR >				
CN200	1-750-418-11	CONNECTOR, FFC/FPC 13P				
CN202	1-580-783-11	CONNECTOR, BOARD TO BOARD 10P				
CN203	1-580-783-11	CONNECTOR, BOARD TO BOARD 10P				
CN204	1-580-783-11	CONNECTOR, BOARD TO BOARD 10P				
CN205	1-750-414-11	CONNECTOR, FFC/FPC 9P				
CN206	1-750-414-11	CONNECTOR, FFC/FPC 9P				
CN207	1-750-420-11	CONNECTOR, FFC/FPC 15P				
* CN208	1-564-522-11	PLUG, CONNECTOR 7P				
* CN354	1-564-518-11	PLUG, CONNECTOR 3P				

Ref. No.	Part No.	Description					Remark
		< DIODE >					
D201	8-719-987-63	DIODE	1N4148M				
D202	8-719-987-63	DIODE	1N4148M				
D203	8-719-987-63	DIODE	1N4148M				
D204	8-719-200-82	DIODE	11ES2				
D205	8-719-200-82	DIODE	11ES2				
D206	8-719-200-82	DIODE	11ES2				
D207	8-719-987-63	DIODE	1N4148M				
D208	8-719-987-63	DIODE	1N4148M				
		< IC >					
IC201	8-759-098-75	IC	HA12171NT				
IC202	8-759-099-08	IC	M50964-260FP				
IC203	8-759-520-90	IC	PST572E				
IC204	8-759-207-05	IC	TA7272P				
		< COIL >					
L201	1-408-080-00	INDUCTOR		100uH			
L202	1-408-080-00	INDUCTOR		100uH			
		< TRANSISTOR >					
Q201	8-729-119-78	TRANSISTOR	2SC2785-HFE				
Q210	8-729-900-65	TRANSISTOR	DTA144ES				
Q211	8-729-900-65	TRANSISTOR	DTA144ES				
Q212	8-729-900-65	TRANSISTOR	DTA144ES				
Q213	8-729-900-65	TRANSISTOR	DTA144ES				
Q214	8-729-900-65	TRANSISTOR	DTA144ES				
Q215	8-729-900-65	TRANSISTOR	DTA144ES				
Q216	8-729-900-89	TRANSISTOR	DTC144ES				
Q217	8-729-900-89	TRANSISTOR	DTC144ES				
Q218	8-729-900-65	TRANSISTOR	DTA144ES				
Q219	8-729-119-78	TRANSISTOR	2SC2785-HFE				
Q220	8-729-119-78	TRANSISTOR	2SC2785-HFE				
Q221	8-729-801-84	TRANSISTOR	2SB1013-4				
Q222	8-729-801-84	TRANSISTOR	2SB1013-4				
Q223	8-729-900-65	TRANSISTOR	DTA144ES				
Q224	8-729-900-89	TRANSISTOR	DTC144ES				
Q301	8-729-119-78	TRANSISTOR	2SC2785-HFE				
		< RESISTOR >					
R201	1-249-430-11	CARBON		12K	5%	1/4W	
R202	1-249-431-11	CARBON		15K	5%	1/4W	
R203	1-249-425-11	CARBON		4.7K	5%	1/4W	F
R204	1-249-428-11	CARBON		8.2K	5%	1/4W	F
R205	1-249-441-11	CARBON		100K	5%	1/4W	
R206	1-249-434-11	CARBON		27K	5%	1/4W	
R208	1-249-429-11	CARBON		10K	5%	1/4W	
R209	1-249-432-11	CARBON		18K	5%	1/4W	
R210	1-247-885-00	CARBON		180K	5%	1/4W	
R212	1-249-425-11	CARBON		4.7K	5%	1/4W	F

TC MAIN TC MAIN (U)

Ref. No.	Part No.	Description				Remark
R213	1-249-432-11	CARBON	18K	5%	1/4W	
R214	1-247-840-00	CARBON	2.4K	5%	1/4W	
R215	1-249-433-11	CARBON	22K	5%	1/4W	
R216	1-249-417-11	CARBON	1K	5%	1/4W	F
R231	1-249-429-11	CARBON	10K	5%	1/4W	
R232	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R233	1-249-434-11	CARBON	27K	5%	1/4W	
R234	1-249-429-11	CARBON	10K	5%	1/4W	
R235	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R236	1-249-434-11	CARBON	27K	5%	1/4W	
R241	1-249-429-11	CARBON	10K	5%	1/4W	
R242	1-247-903-00	CARBON	1M	5%	1/4W	
R243	1-247-895-00	CARBON	470K	5%	1/4W	
R244	1-247-895-00	CARBON	470K	5%	1/4W	
R245	1-249-410-11	CARBON	270	5%	1/4W	F
R246	1-249-410-11	CARBON	270	5%	1/4W	F
R248	1-249-410-11	CARBON	270	5%	1/4W	F
R249	1-249-410-11	CARBON	270	5%	1/4W	F
R251	1-249-410-11	CARBON	270	5%	1/4W	F
R252	1-249-411-11	CARBON	330	5%	1/4W	
R253	1-249-429-11	CARBON	10K	5%	1/4W	
R254	1-249-429-11	CARBON	10K	5%	1/4W	
R255	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R256	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R257	1-249-437-11	CARBON	47K	5%	1/4W	
R258	1-249-429-11	CARBON	10K	5%	1/4W	
R259	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R260	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R261	1-249-429-11	CARBON	10K	5%	1/4W	
R262	1-249-429-11	CARBON	10K	5%	1/4W	
R263	1-249-411-11	CARBON	330	5%	1/4W	
R265	1-249-411-11	CARBON	330	5%	1/4W	
R266	1-249-429-11	CARBON	10K	5%	1/4W	
R267	1-249-415-11	CARBON	680	5%	1/4W	F
R268	1-249-429-11	CARBON	10K	5%	1/4W	
R269	1-249-415-11	CARBON	680	5%	1/4W	F
R270	1-249-429-11	CARBON	10K	5%	1/4W	
R271	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R272	1-249-435-11	CARBON	33K	5%	1/4W	
R273	1-249-437-11	CARBON	47K	5%	1/4W	
R274	1-247-872-11	CARBON	51K	5%	1/4W	
R275	1-247-862-11	CARBON	20K	5%	1/4W	
R276	1-247-866-11	CARBON	30K	5%	1/4W	
R277	1-247-872-11	CARBON	51K	5%	1/4W	
R278	1-249-405-11	CARBON	100	5%	1/4W	F
R279	1-249-381-11	CARBON	1	5%	1/4W	F
R280	1-249-381-11	CARBON	1	5%	1/4W	F
R281	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R282	1-249-435-11	CARBON	33K	5%	1/4W	
R283	1-249-437-11	CARBON	47K	5%	1/4W	
R284	1-247-872-11	CARBON	51K	5%	1/4W	
R285	1-247-862-11	CARBON	20K	5%	1/4W	
R286	1-247-866-11	CARBON	30K	5%	1/4W	
R287	1-247-872-11	CARBON	51K	5%	1/4W	
R288	1-249-405-11	CARBON	100	5%	1/4W	F
R289	1-249-381-11	CARBON	1	5%	1/4W	F
R290	1-249-381-11	CARBON	1	5%	1/4W	F
⚠R291	1-249-456-11	CARBON	5.6	5%	1/4W	
R292	1-249-441-11	CARBON	100K	5%	1/4W	
R293	1-249-405-11	CARBON	100	5%	1/4W	F
R294	1-249-405-11	CARBON	100	5%	1/4W	F
R295	1-249-417-11	CARBON	1K	5%	1/4W	F
R300	1-215-451-00	METAL	18K	1%	1/6W	
R301	1-249-430-11	CARBON	12K	5%	1/4W	
R302	1-249-431-11	CARBON	15K	5%	1/4W	
R303	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R304	1-249-428-11	CARBON	8.2K	5%	1/4W	F
R305	1-249-429-11	CARBON	10K	5%	1/4W	
R306	1-249-429-11	CARBON	10K	5%	1/4W	
R307	1-249-429-11	CARBON	10K	5%	1/4W	
R308	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R309	1-249-429-11	CARBON	10K	5%	1/4W	
R310	1-249-429-11	CARBON	10K	5%	1/4W	
R311	1-247-864-11	CARBON	24K	5%	1/4W	
R312	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R313	1-249-432-11	CARBON	18K	5%	1/4W	
R314	1-247-840-00	CARBON	2.4K	5%	1/4W	
R315	1-249-433-11	CARBON	22K	5%	1/4W	
R316	1-249-417-11	CARBON	1K	5%	1/4W	F
R320	1-249-429-11	CARBON	10K	5%	1/4W	
R321	1-249-429-11	CARBON	10K	5%	1/4W	
R322	1-249-429-11	CARBON	10K	5%	1/4W	

< VARIABLE RESISTOR >

RV201	1-241-136-11	RES, ADJ, CARBON 10K
RV301	1-241-136-11	RES, ADJ, CARBON 10K

< VIBRATOR >

X201	1-577-358-21	VIBRATOR, CERAMIC (4MHz)

****

* A-4360-949-A TC MAIN (U) BOARD, COMPLETE (C50U)

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< CAPACITOR >

C201	1-162-290-31	CERAMIC	470PF	10%	50V
C203	1-136-157-00	FILM	0.022uF	5%	50V
C204	1-124-282-00	ELECT	22uF	20%	25V
C205	1-124-443-00	ELECT	100uF	20%	10V
C211	1-162-290-31	CERAMIC	470PF	10%	50V

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Ref. No.	Part No.	Description			Remark
C213	1-136-157-00	FILM	0.022uF	5%	50V
C214	1-124-282-00	ELECT	22uF	20%	25V
C215	1-124-443-00	ELECT	100uF	20%	10V
C216	1-124-443-00	ELECT	100uF	20%	10V
C221	1-136-433-11	FILM	100PF	5%	630V
C222	1-162-284-31	CERAMIC	150PF	10%	50V
C223	1-136-439-11	FILM	330PF	5%	630V
C231	1-130-479-00	MYLAR	0.0047uF	5%	50V
C232	1-161-375-00	CERAMIC	2200PF	20%	50V
C233	1-124-903-11	ELECT	1uF	20%	50V
C234	1-124-907-11	ELECT	10uF	20%	50V
C235	1-164-159-11	CERAMIC	0.1uF		50V
C236	1-124-907-11	ELECT	10uF	20%	50V
C237	1-124-903-11	ELECT	1uF	20%	50V
C238	1-124-902-00	ELECT	0.47uF	20%	50V
C239	1-124-907-11	ELECT	10uF	20%	50V
C251	1-162-290-31	CERAMIC	470PF	10%	50V
C253	1-136-157-00	FILM	0.022uF	5%	50V
C254	1-124-282-00	ELECT	22uF	20%	25V
C255	1-124-443-00	ELECT	100uF	20%	10V
C261	1-162-290-31	CERAMIC	470PF	10%	50V
C263	1-136-157-00	FILM	0.022uF	5%	50V
C264	1-124-282-00	ELECT	22uF	20%	25V
C265	1-124-443-00	ELECT	100uF	20%	10V
C266	1-124-443-00	ELECT	100uF	20%	10V
C271	1-136-433-11	FILM	100PF	5%	630V
C272	1-162-284-31	CERAMIC	150PF	10%	50V
C273	1-136-439-11	FILM	330PF	5%	630V
C281	1-130-479-00	MYLAR	0.0047uF	5%	50V
C282	1-161-375-00	CERAMIC	2200PF	20%	50V
C283	1-124-903-11	ELECT	1uF	20%	50V
C284	1-124-907-11	ELECT	10uF	20%	50V
C285	1-164-159-11	CERAMIC	0.1uF		50V
C286	1-124-907-11	ELECT	10uF	20%	50V
C287	1-124-903-11	ELECT	1uF	20%	50V
C288	1-124-902-00	ELECT	0.47uF	20%	50V
C289	1-124-907-11	ELECT	10uF	20%	50V
C301	1-124-925-11	ELECT	2.2uF	20%	100V
C302	1-136-601-11	FILM	0.01uF	5%	630V
C303	1-130-848-00	FILM	0.0082uF	5%	100V
C304	1-136-593-11	FILM	0.0033uF	5%	100V
C305	1-136-593-11	FILM	0.0033uF	5%	100V
C306	1-124-902-00	ELECT	0.47uF	20%	50V
C307	1-124-927-11	ELECT	4.7uF	20%	100V
C308	1-136-562-11	FILM	0.0082uF	5%	630V
C310	1-124-478-11	ELECT	100uF	20%	25V
C311	1-124-478-11	ELECT	100uF	20%	25V
C312	1-124-443-00	ELECT	100uF	20%	10V
C313	1-164-159-11	CERAMIC	0.1uF		50V
C314	1-164-159-11	CERAMIC	0.1uF		50V

Ref. No.	Part No.	Description			Remark
C351	1-136-175-00	FILM	0.68uF	5%	50V
C352	1-164-159-11	CERAMIC	0.1uF		50V
C353	1-124-443-00	ELECT	100uF	20%	10V
C363	1-124-907-11	ELECT	10uF	20%	50V
C364	1-162-596-11	CERAMIC	0.022uF	10%	50V
C391	1-124-443-00	ELECT	100uF	20%	10V
C392	1-124-443-00	ELECT	100uF	20%	10V
C393	1-124-443-00	ELECT	100uF	20%	10V
C394	1-124-443-00	ELECT	100uF	20%	10V
C801	1-124-443-00	ELECT	100uF	20%	10V
C802	1-161-494-00	CERAMIC	0.022uF		25V
C803	1-124-443-00	ELECT	100uF	20%	10V
C900	1-124-907-11	ELECT	10uF	20%	50V
		< CONNECTOR >			
CN301	1-564-506-11	PLUG, CONNECTOR 3P			
* CN311	1-564-509-11	PLUG, CONNECTOR 6P			
CN321	1-564-505-11	PLUG, CONNECTOR 2P			
* CN351	1-564-509-11	PLUG, CONNECTOR 6P			
CN352	1-750-418-11	CONNECTOR, FFC/FPC 13P			
CN353	1-750-418-11	CONNECTOR, FFC/FPC 13P			
* CN354	1-564-506-11	PLUG, CONNECTOR 3P			
CN361	1-750-452-11	CONNECTOR, FFC/FPC 11P			
		< DIODE >			
D351	8-719-933-54	DIODE HZS9A2L			
D362	8-719-987-63	DIODE 1N4148M			
D801	8-719-200-82	DIODE 11ES2			
D802	8-719-000-54	DIODE UZL-6L3			
		< HEAD >			
HE901	1-543-673-11	HEAD, MAGNETIC (ERASE)			
HP901	1-543-940-11	HEAD, MAGNETIC (PLAYBACK)			
HRP901	1-543-319-11	HEAD, MAGNETIC (REC/PLAYBACK)			
		< IC >			
IC301	8-759-111-44	IC uPC4570C-1			
IC302	8-759-111-44	IC uPC4570C-1			
IC303	8-759-079-42	IC uPC1330HA-NA			
IC304	8-759-098-73	IC HA12172NT			
IC309	8-759-520-90	IC PST572E			
IC351	8-759-822-09	IC LB1641			
IC361	8-759-175-90	IC M37471M4-220SP			
		< COIL >			
L201	1-410-781-11	INDUCTOR	33mH		
L271	1-410-781-11	INDUCTOR	33mH		
L301	1-410-521-11	INDUCTOR	100uH		

TC MAIN (U)

Ref.No.	Part No.	Description	Remark
		< MOTOR >	
M901	X-3362-377-1	MOTOR (WH) ASSY (CAPSTAN)	
		< TRANSISTOR >	
Q241	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q291	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q301	8-729-194-57	TRANSISTOR 2SC945-P	
Q302	8-729-194-57	TRANSISTOR 2SC945-P	
Q303	8-729-194-57	TRANSISTOR 2SC945-P	
Q351	8-729-900-65	TRANSISTOR DTA144ES	
Q352	8-729-900-89	TRANSISTOR DTC144ES	
Q353	8-729-801-93	TRANSISTOR 2SD1387-3	
Q354	8-729-900-61	TRANSISTOR DTA114ES	
Q355	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q356	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q361	8-729-900-80	TRANSISTOR DTC114ES	
Q365	8-729-900-80	TRANSISTOR DTC114ES	
Q391	8-729-900-61	TRANSISTOR DTA114ES	
Q801	8-729-801-93	TRANSISTOR 2SD1387-3	
Q901	8-729-900-61	TRANSISTOR DTA114ES	
Q902	8-729-900-61	TRANSISTOR DTA114ES	
Q903	8-729-900-61	TRANSISTOR DTA114ES	
		< RESISTOR >	
R201	1-247-899-11	CARBON 680K 5% 1/4W	
R202	1-249-405-11	CARBON 100 5% 1/4W	F
R203	1-247-882-11	CARBON 130K 5% 1/4W	
R204	1-249-426-11	CARBON 5.6K 5% 1/4W	
R205	1-249-409-11	CARBON 220 5% 1/4W	F
R211	1-247-889-00	CARBON 270K 5% 1/4W	
R212	1-249-433-11	CARBON 22K 5% 1/4W	
R213	1-247-882-11	CARBON 130K 5% 1/4W	
R214	1-249-426-11	CARBON 5.6K 5% 1/4W	
R215	1-249-409-11	CARBON 220 5% 1/4W	F
R216	1-249-405-11	CARBON 100 5% 1/4W	F
R221	1-249-430-11	CARBON 12K 5% 1/4W	
R231	1-249-430-11	CARBON 12K 5% 1/4W	
R232	1-249-431-11	CARBON 15K 5% 1/4W	
R233	1-249-429-11	CARBON 10K 5% 1/4W	
R241	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R242	1-249-429-11	CARBON 10K 5% 1/4W	
R243	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R245	1-249-433-11	CARBON 22K 5% 1/4W	
R246	1-247-840-00	CARBON 2.4K 5% 1/4W	
R251	1-247-899-11	CARBON 680K 5% 1/4W	
R252	1-249-405-11	CARBON 100 5% 1/4W	F
R253	1-247-882-11	CARBON 130K 5% 1/4W	
R254	1-249-426-11	CARBON 5.6K 5% 1/4W	
R255	1-249-409-11	CARBON 220 5% 1/4W	F
R261	1-247-889-00	CARBON 270K 5% 1/4W	
R262	1-249-433-11	CARBON 22K 5% 1/4W	
R263	1-247-882-11	CARBON 130K 5% 1/4W	
R264	1-249-426-11	CARBON 5.6K 5% 1/4W	
R265	1-249-409-11	CARBON 220 5% 1/4W	F
R266	1-249-405-11	CARBON 100 5% 1/4W	F
R271	1-249-430-11	CARBON 12K 5% 1/4W	
R281	1-249-430-11	CARBON 12K 5% 1/4W	
R282	1-249-431-11	CARBON 15K 5% 1/4W	
R283	1-249-429-11	CARBON 10K 5% 1/4W	
R291	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R292	1-249-429-11	CARBON 10K 5% 1/4W	
R293	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R295	1-249-433-11	CARBON 22K 5% 1/4W	
R296	1-247-840-00	CARBON 2.4K 5% 1/4W	
R301	1-249-429-11	CARBON 10K 5% 1/4W	
⚠R302	1-212-849-00	FUSIBLE 4.7 5% 1/4W	F
⚠R303	1-212-849-00	FUSIBLE 4.7 5% 1/4W	F
R304	1-249-436-11	CARBON 39K 5% 1/4W	
R305	1-249-436-11	CARBON 39K 5% 1/4W	
R310	1-247-876-11	CARBON 75K 5% 1/4W	
R311	1-249-432-11	CARBON 18K 5% 1/4W	
R312	1-249-432-11	CARBON 18K 5% 1/4W	
R313	1-249-429-11	CARBON 10K 5% 1/4W	
R314	1-249-429-11	CARBON 10K 5% 1/4W	
R315	1-249-429-11	CARBON 10K 5% 1/4W	
R316	1-249-429-11	CARBON 10K 5% 1/4W	
R317	1-249-429-11	CARBON 10K 5% 1/4W	
R318	1-249-429-11	CARBON 10K 5% 1/4W	
R319	1-249-417-11	CARBON 1K 5% 1/4W	F
R319	1-249-429-11	CARBON 10K 5% 1/4W	
R321	1-247-864-11	CARBON 24K 5% 1/4W	
R351	1-249-417-11	CARBON 1K 5% 1/4W	F
R353	1-249-414-11	CARBON 560 5% 1/4W	F
R354	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R355	1-249-407-11	CARBON 150 5% 1/4W	F
R356	1-249-423-11	CARBON 3.3K 5% 1/4W	F
R358	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R361	1-249-429-11	CARBON 10K 5% 1/4W	
R362	1-249-429-11	CARBON 10K 5% 1/4W	
R363	1-249-429-11	CARBON 10K 5% 1/4W	
R364	1-249-429-11	CARBON 10K 5% 1/4W	
R365	1-249-417-11	CARBON 1K 5% 1/4W	F
R366	1-249-437-11	CARBON 47K 5% 1/4W	
R367	1-249-417-11	CARBON 1K 5% 1/4W	F
R368	1-249-437-11	CARBON 47K 5% 1/4W	
R369	1-247-903-00	CARBON 1M 5% 1/4W	
R370	1-249-429-11	CARBON 10K 5% 1/4W	
R371	1-249-405-11	CARBON 100 5% 1/4W	F
R372	1-249-441-11	CARBON 100K 5% 1/4W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref.No.	Part No.	Description	Remark
R376	1-249-429-11	CARBON 10K 5% 1/4W	
R377	1-249-429-11	CARBON 10K 5% 1/4W	
R378	1-249-417-11	CARBON 1K 5% 1/4W	F
R379	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R380	1-249-417-11	CARBON 1K 5% 1/4W	F
R381	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R382	1-249-417-11	CARBON 1K 5% 1/4W	F
R383	1-249-429-11	CARBON 10K 5% 1/4W	
R384	1-249-417-11	CARBON 1K 5% 1/4W	F
R385	1-249-429-11	CARBON 10K 5% 1/4W	
R386	1-249-417-11	CARBON 1K 5% 1/4W	F
R387	1-249-429-11	CARBON 10K 5% 1/4W	
R388	1-249-429-11	CARBON 10K 5% 1/4W	
⚠R391	1-219-136-11	FUSIBLE 0.22 10% 1/4W	
⚠R392	1-219-136-11	FUSIBLE 0.22 10% 1/4W	
R399	1-249-393-11	CARBON 10 5% 1/4W	F
R801	1-249-429-11	CARBON 10K 5% 1/4W	
R802	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R803	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R804	1-249-413-11	CARBON 470 5% 1/4W	F
		< VARIABLE RESISTOR >	
RV201	1-241-119-11	RES, ADJ, CARBON 1K	
RV211	1-241-119-11	RES, ADJ, CARBON 1K	
RV221	1-238-550-11	RES, ADJ, CARBON 100K	
RV231	1-241-136-11	RES, ADJ, CARBON 10K	
RV251	1-241-119-11	RES, ADJ, CARBON 1K	
RV261	1-241-119-11	RES, ADJ, CARBON 1K	
RV271	1-238-550-11	RES, ADJ, CARBON 100K	
RV281	1-241-136-11	RES, ADJ, CARBON 10K	
RV351	1-241-136-11	RES, ADJ, CARBON 10K	
RV352	1-241-121-11	RES, ADJ, CARBON 4.7K	
		< TRANSFORMER >	
T301	1-433-400-11	TRANSFORMER, BIAS OSCILLATION	
		< VIBRATOR >	
X361	1-577-358-21	VIBRATOR, CERAMIC (4MHz)	

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*	A-4360-973-A	TC SW BOARD, COMPLETE (C50) ***************************	
		< CONNECTOR >	
CN307	1-691-648-11	SOCKET, CONNECTOR 15P	
		< DIODE >	
D302	8-719-018-46	LED SEL3510C-CD (▷)	
D303	8-719-018-46	LED SEL3510C-CD (◁)	
D304	8-719-312-37	LED SEL4225C-C (● REC)	
D305	8-719-310-04	LED SEL4925A-D (▌▌ PAUSE)	
D307	8-719-018-46	LED SEL3510C-CD (▷)	
D308	8-719-018-46	LED SEL3510C-CD (◁)	
D309	8-719-312-37	LED SEL4225C-C (CD SYNCHRO)	
D311	8-719-312-37	LED SEL4225C-C (HIGH SPEED DUBBING)	
		< RESISTOR >	
R341	1-249-407-11	CARBON 150 5% 1/4W	F
R342	1-249-409-11	CARBON 220 5% 1/4W	F
R343	1-249-415-11	CARBON 680 5% 1/4W	F
R344	1-249-417-11	CARBON 1K 5% 1/4W	F
R345	1-249-426-11	CARBON 5.6K 5% 1/4W	
R346	1-249-430-11	CARBON 12K 5% 1/4W	
R347	1-249-407-11	CARBON 150 5% 1/4W	F
R348	1-249-409-11	CARBON 220 5% 1/4W	F
R349	1-249-411-11	CARBON 330 5% 1/4W	
R350	1-249-413-11	CARBON 470 5% 1/4W	F
R351	1-249-411-11	CARBON 330 5% 1/4W	
R352	1-249-413-11	CARBON 470 5% 1/4W	F
R353	1-249-415-11	CARBON 680 5% 1/4W	F
R354	1-249-417-11	CARBON 1K 5% 1/4W	F
R355	1-249-420-11	CARBON 1.8K 5% 1/4W	F
R356	1-249-424-11	CARBON 3.9K 5% 1/4W	F
		< SWITCH >	
S301	1-554-303-21	SWITCH, TACTILE (■)	
S302	1-554-303-21	SWITCH, TACTILE (▷)	
S303	1-554-303-21	SWITCH, TACTILE (◁)	
S304	1-554-303-21	SWITCH, TACTILE (◀◀ AMS)	
S305	1-554-303-21	SWITCH, TACTILE (▶▶ AMS)	
S306	1-692-356-11	SWITCH, SLIDE (DOLBY NR)	
S307	1-692-503-11	SWITCH, SLIDE (DIRECTION)	
S308	1-554-303-21	SWITCH, TACTILE (■)	
S309	1-554-303-21	SWITCH, TACTILE (▌▌ PAUSE)	
S310	1-554-303-21	SWITCH, TACTILE (▷)	
S311	1-554-303-21	SWITCH, TACTILE (◁)	
S313	1-554-303-21	SWITCH, TACTILE (◀◀ AMS)	
S314	1-554-303-21	SWITCH, TACTILE (▶▶ AMS)	
S315	1-554-303-21	SWITCH, TACTILE (● REC)	
S316	1-554-303-21	SWITCH, TACTILE (HIGH SPEED DUBBING)	
S318	1-554-303-21	SWITCH, TACTILE (CD SYNCHRO)	

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*	A-4360-950-A	TC SW (U) BOARD, COMPLETE (C50U) ********************************	
		< CONNECTOR >	
CN362	1-691-646-11	SOCKET, CONNECTOR 11P	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

TC SW (U) TRANSISTOR VR

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D901	8-719-018-46	LED SEL3510C-CD (▷)	
D902	8-719-018-46	LED SEL3510C-CD (◁)	
D903	8-719-310-04	LED SEL4925A-D (▌▌ PAUSE)	
D904	8-719-312-37	LED SEL4225C-C (● REC)	
D905	8-719-312-37	LED SEL4225C-C (HIGH SPEED DUBBING)	
		< RESISTOR >	
R901	1-249-407-11	CARBON 150 5% 1/4W F	
R902	1-249-407-11	CARBON 150 5% 1/4W F	
R903	1-249-409-11	CARBON 220 5% 1/4W F	
R904	1-249-413-11	CARBON 470 5% 1/4W F	
R905	1-249-413-11	CARBON 470 5% 1/4W F	
R906	1-249-419-11	CARBON 1.5K 5% 1/4W F	
R907	1-249-421-11	CARBON 2.2K 5% 1/4W F	
R908	1-249-424-11	CARBON 3.9K 5% 1/4W F	
R909	1-249-426-11	CARBON 5.6K 5% 1/4W	
R910	1-249-430-11	CARBON 12K 5% 1/4W	
R911	1-249-419-11	CARBON 1.5K 5% 1/4W F	
R912	1-249-421-11	CARBON 2.2K 5% 1/4W F	
R913	1-247-854-11	CARBON 9.1K 5% 1/4W	
R914	1-249-430-11	CARBON 12K 5% 1/4W	
		< SWITCH >	
S901	1-692-356-11	SWITCH, SLIDE (DOLBY NR)	
S902	1-554-303-21	SWITCH, TACTILE (■)	
S903	1-554-303-21	SWITCH, TACTILE (▷)	
S904	1-554-303-21	SWITCH, TACTILE (◀◀ AMS)	
S905	1-554-303-21	SWITCH, TACTILE (▶▶ AMS)	
S906	1-554-303-21	SWITCH, TACTILE (● REC)	
S907	1-554-303-21	SWITCH, TACTILE (HIGH SPEED DUBBING)	
S908	1-554-303-21	SWITCH, TACTILE (■)	
S909	1-554-303-21	SWITCH, TACTILE (▌▌ PAUSE)	
S910	1-554-303-21	SWITCH, TACTILE (▷)	
S911	1-554-303-21	SWITCH, TACTILE (◀◀ AMS)	
S912	1-554-303-21	SWITCH, TACTILE (▶▶ AMS)	

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Ref. No.	Part No.	Description	Remark
*	1-648-807-11	TRANSISTOR BOARD ****************	
		< TRANSISTOR >	
Q911	8-729-141-83	TRANSISTOR 2SA473	
Q912	8-729-209-15	TRANSISTOR 2SD2012	

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Ref. No.	Part No.	Description	Remark
*	1-648-412-11	VR BOARD ********	
		< CAPACITOR >	
C861	1-124-477-11	ELECT 47uF 20% 25V	
		< CONNECTOR >	
CN803	1-695-092-11	SOCKET, CONNECTOR 7P	
CN804	1-564-506-11	PLUG, CONNECTOR 3P	
		< IC >	
IC861	8-759-820-62	IC LB1639	
		< RESISTOR >	
R861	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R862	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R863	1-249-393-11	CARBON 10 5% 1/4W F	
		< VARIABLE RESISTOR >	
RV861	1-223-487-11	RES, VAR, CARBON 100K/100K (VOLUME)	

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Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS *************	
14	1-534-517-00	WIRE (FLAT TYPE) (13 CORE) (C50U)	
14	1-690-590-31	WIRE, FLAT TYPE (13 CORE) (C50)	
⚠18	1-574-902-11	CORD, POWER (C50:E, PX)	
⚠18	1-590-083-11	CORD, POWER (C50:AUS)	
⚠18	1-696-169-11	CORD, POWER (AEP) (C50:AEP, IT, G, EE, EA, SP)	
⚠18	1-696-570-21	CORD, POWER (C50:UK)	
⚠18	1-751-586-11	CORD, POWER (C50:CND/C50U)	
20	1-696-804-21	WIRE (FLAT TYPE) (19 CORE)	
⚠21	1-569-008-11	ADAPTER, CONVERSION 2P (C50:EA, SP)	
⚠22	1-569-007-11	ADAPTER, CONVERSION 2P (C50:E, PX)	
62	1-575-784-11	WIRE (FLAT TYPE) (11 CORE) (C50U)	
62	1-690-065-11	WIRE, FLAT TYPE (15 CORE) (C50)	
63	1-690-319-11	WIRE, FLAT TYPE (11 CORE)	
64	1-575-906-11	WIRE, FLAT TYPE (15 CORE)	
69	1-696-725-11	WIRE (FLAT TYPE) (9 CORE) (C50)	
71	1-590-209-11	WIRE (FLAT TYPE) (7 CORE)	
167	1-638-983-11	MOTOR FLEXIBLE BOARD (C50)	
378	1-452-676-11	MAGNET	
⚠505	8-848-144-11	DEVICE, OPTICAL KSS-240A	
506	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
508	1-751-597-11	WIRE (FLAT TYPE) (22 CORE)	
⚠F901	1-532-215-00	FUSE (T800mA) (C50:AEP, UK, IT, G, EE)	
⚠F901	1-532-078-00	FUSE (T1A) (C50:E, EA, AUS, SP, PX)	
⚠F901	1-576-103-11	FUSE (1.6A) (C50:CND/C50U)	
⚠F902	1-532-279-00	FUSE (T500mA) (C50:E, EA, SP, PX)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
⚠F911	1-532-203-00	FUSE (T2A)(C50:EXCEPT CND)	
⚠F911	1-576-104-11	FUSE (2A)(C50:CND/C50U)	
⚠F912	1-532-203-00	FUSE (T2A)(C50:EXCEPT CND)	
⚠F912	1-576-104-11	FUSE (2A)(C50:CND/C50U)	
HE901	1-543-673-11	HEAD, MAGNETIC (ERASE)(C50U)	
HP101	A-2003-837-F	DECK ASSY, HEAD (DECK A)(C50)	
HP901	1-543-940-11	HEAD, MAGNETIC (PLAYBACK)(C50U)	
HRP901	1-543-319-11	HEAD, MAGNETIC (REC/PB)(C50U)	
HRPE101	A-2003-838-F	DECK ASSY, HEAD (DECK B)(C50)	
M101	X-4917-523-3	MOTOR ASSY, DISK (SPINDLE)	
M101A	X-3363-501-1	MOTOR, REEL ASSY (DECK A)(C50)	
M101B	X-3363-501-1	MOTOR, REEL ASSY (DECK B)(C50)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
M102A	X-3365-377-1	MOTOR, CAPSTAN ASSY (DECK A)(C50)	
M102B	X-3365-377-1	MOTOR, CAPSTAN ASSY (DECK B)(C50)	
M103	A-4660-232-A	MOTOR (CDM) ASSY (LOADING)	
M104	A-4660-232-A	MOTOR (CDM) ASSY (UP/DOWN)	
M105	A-4660-232-A	MOTOR (CDM) ASSY (CLAMP)	
M901	X-3362-377-1	MOTOR (WH) ASSY (CAPSTAN)(C50U)	
M902	A-2004-188-A	MOTOR ASSY, DC (TRIGGER)(C50U)	
S101	1-572-085-11	SWITCH LEAF (LIMIT)	
S102	1-466-819-11	ENCODER, ROTARY	
⚠T901	1-423-710-11	TRANSFORMER, POWER (C50U)	
⚠T901	1-423-711-11	TRANSFORMER, POWER (C50:AEP, IT, G, EE)	
⚠T901	1-423-712-11	TRANSFORMER, POWER (C50:UK)	
⚠T901	1-423-713-11	TRANSFORMER, POWER (C50:E, EA, AUS, PX)	
⚠T901	1-423-752-11	TRANSFORMER, POWER (C50:SP)	
⚠T901	1-423-753-11	TRANSFORMER, POWER (C50:CND)	

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ACCESSORIES & PACKING MATERIALS

****

Ref. No.	Part No.	Description	Remark
	1-467-179-11	COMMANDER, STANDARD (RM-S535) (C50:AEP, UK, IT, G, EE)	
	1-501-374-11	ANTENNA, LOOP (C50:AEP, UK, IT, G, EE)	
	1-501-594-11	ANTENNA (FM)(C50:AEP, UK, IT, G, EE)	
	3-372-531-01	SCREW (C), TRANSPORT	
*	3-703-079-21	LABEL (BACK), SUB CAUTION (C50:UK)	
	3-703-710-41	STICKER, SONY SYMBOL (12)	
*	3-704-350-01	SHEET (STANDARD), PROTECTION	
	3-757-339-11	MANUAL, INSTRUCTION (ENGLISH) (C50:AEP, UK, EE)	
	3-757-339-41	MANUAL, INSTRUCTION (FRENCH, SPANISH, PORTUGUESE, DUTCH, SWEDISH)(C50:AEP)	
	3-757-339-51	MANUAL, INSTRUCTION (GERMAN, ITALIAN) (C50:AEP, IT, G)	
	3-757-339-61	MANUAL, INSTRUCTION (RUSSIAN, POLISH) (C50:EE)	
	3-757-339-71	MANUAL, INSTRUCTION (DANISH, FINNISH) (C50:EE)	
	3-757-461-11	INSTRUCTION (CAUTION)	
	4-941-762-11	COVER (MLY), BATTERY (COMMANDER) (C50:AEP, UK, IT, G, EE)	
*	4-961-658-01	CUSHION (L)	
*	4-961-659-01	CUSHION (R)	
*	4-961-663-01	INDIVIDUAL CARTON (C50:AEP, UK, IT, G, EE)	

****

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HARDWARE LIST

****

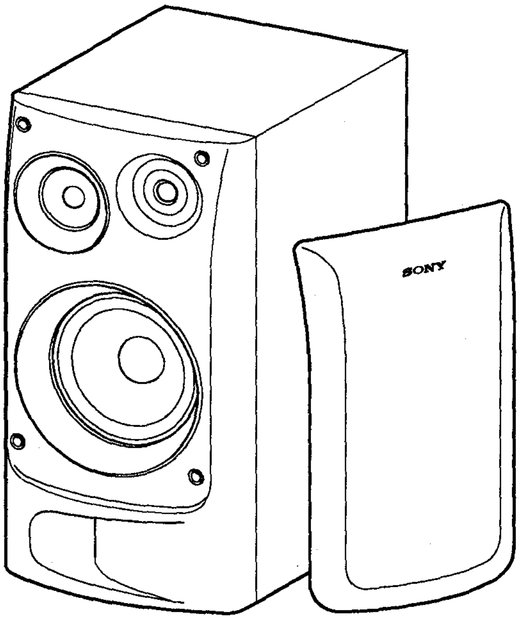
Ref. No.	Part No.	Description	Remark
#1	7-621-255-15	SCREW +P 2X3	
#2	7-682-548-09	SCREW +BVTT 3X8 (S)	
#3	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#4	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	
#5	7-685-870-01	SCREW +BVTT 3X5 (S)	
#6	7-621-775-00	SCREW +B 2.6X3	
#7	7-627-556-08	SCREW +P 2.6X2.8 (C50)	
#8	7-621-255-25	SCREW +BVTT 2X4 (S)(C50U)	
#9	7-623-921-01	RING, RETAINING, CAPSTAN (C50U)	
#10	7-621-770-67	SCREW +BVTT 2.6X6 (S)(C50U)	
#11	7-621-775-10	SCREW +B 2.6X4 (C50U)	
#12	7-621-770-XX	SCREW +PTT 2.6X8 (S)	
#13	7-621-772-48	SCREW +B 2X8 (C50U)	
#14	7-682-547-09	SCREW +BVTT 3X6 (S)	
#15	7-682-546-09	SCREW +PTT 3X5 (S)	
#16	7-685-645-79	SCREW +BTP 3X6 TYPE2 N-S	
#17	7-621-773-95	SCREW +BVTT 2.6X6 (S)	
#18	7-685-131-19	SCREW +BTP 2.6X4 TYPE2 N-S	
#19	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
#20	7-621-773-93	SCREW (PANEL 2.6 TP2)	
#21	7-682-548-04	SCREW +BVTT 3X8 (S)	
#22	7-685-533-19	SCREW +BTP 2.6X6 TYPE2 N-S	
#23	7-621-255-35	SCREW +BVTT 2X5 (S)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

SS-M50

SERVICE MANUAL

AEP Model
UK Model



RIGHT CHANNEL

SPECIFICATIONS

System:	3-way speaker system
Speaker units:	Woofer: 13 cm, cone type
	Midrange: 5 cm, cone type
	Tweeter: 2 cm, dome type
Enclosure type:	Bass reflex
Rated impedance:	6 Ω
Power handling capacity:	Maximum input power 60 W
Sensitivity:	88 dB (1 W, 1 m)
Effective frequency range:	65 – 20.000 Hz
Dimensions:	Approx. 175 x 325 x 235 mm (w/h/d)
Weight:	Approx. 3,2 kg per speaker, net (AEP)
	Approx. 3,0 kg per speaker, net (UK)
	Approx. 7,4 kg in shipping carton (AEP)
	Approx. 6,6 kg in shipping carton (UK)

Design and specifications subject to change without notice.

MICROFILM

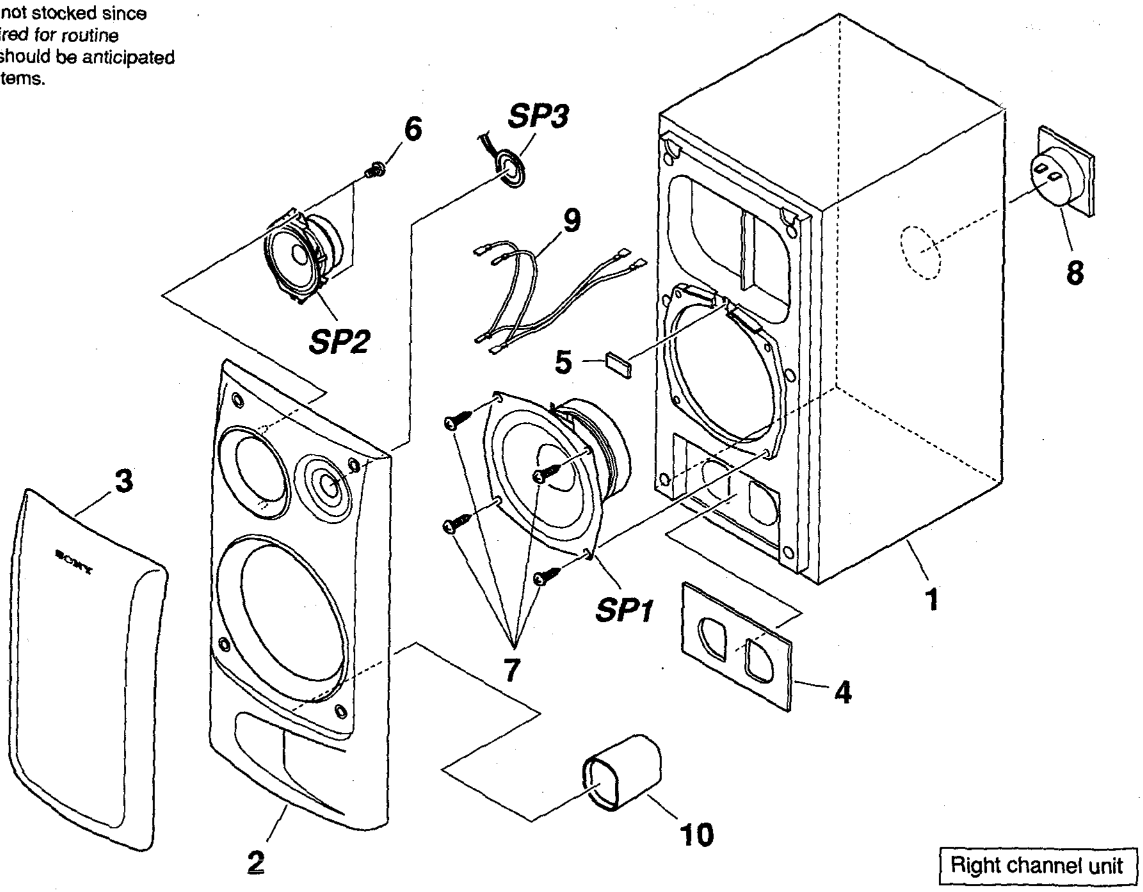
SPEAKER SY

SON

9-95

EXPLODED VIEW AND PARTS LIST

E:
mechanical parts with no reference
nber in the exploded views are not
plied.
ns marked "*" are not stocked since
y are seldom required for routine
rvice. Some delay should be anticipated
en ordering these items.



Ref. No.	Part No.	Description	Remark
1	X-4944-071-1	SPEAKER CABINET ASSY (AEP)	
1	X-4943-981-1	SPEAKER CABINET ASSY (UK)	
2	X-4943-781-1	FRONT PANEL (L) ASSY	
	X-4943-782-1	FRONT PANEL (R) ASSY	
3	X-4943-783-1	GRILLE FRAME ASSY	
4	4-957-980-01	GASKET FOR DUCT	
5	4-960-359-01	PACKING	
6	4-960-364-01	TAPPING SCREW +P 3,5 X 8 (AEP)	
6	4-960-366-01	TAPPING SCREW +P 3,5 X 9,5 (UK)	
7	4-960-361-01	TAPPING SCREW +P 4,0 X 15 (AEP)	
7	4-960-367-01	TAPPING SCREW +P 4,0 X 12 (UK)	
8	1-537-529-11	TERMINAL BOARD	
9	1-751-752-11	INTERCONNECTING CORD (AEP)	
9	1-751-208-11	INTERCONNECTING CORD (UK)	
* 10	4-959-278-01	DUCT	

Ref. No.	Part No.	Description	Remark
SP1	1-504-157-21	SPEAKER (13 cm CONE)	
SP2	1-504-158-11	SPEAKER (5 cm CONE)	
SP3	1-544-293-11	SPEAKER (2 cm DOME)	
	<ACCESSORIES & PACKING MATERIALS>		
	1-751-495-11	SPEAKER CORD (AEP)	
	1-751-496-11	SPEAKER CORD (UK)	
	3-757-341-01	INSTRUCTION MANUAL (UK)	
	3-757-456-01	INSTRUCTION MANUAL (AEP)	
*	4-957-978-01	CUSHION	
*	4-957-982-01	POLYETHYLENE BAG (AEP)	
*	4-958-144-01	POLYETHYLENE BAG (UK)	
*	4-960-741-01	CARTON (UK)	
*	4-961-728-01	CARTON (AEP)	

Sony Corporation
Audio Group

English
93H09Y0960-1
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FH-C5X/MHC-C50

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
MHC-C50
E Model
Australian Model
PX Model
FH-C5X

- These systems are composed of following models.
  As for the service manual it is issued for each component model, then, please refer to it.

COMPONENT MODEL NAME FOR THESE SYSTEM

	MHC-C50			FH-C5X
	US	CND	AEP, UK, IT, G, EE	E, EA, AUS, SP, PX
TUNER, DECK, CD, AMPLIFIER	HCD-C50U	HCD-C50		
SPEAKER SYSTEM	SS-M50N		SS-M50	SS-M50E

SPECIFICATIONS

General

Power requirements	US, CND models : 120V AC, 60Hz UK, AUS models : 240V AC, 50Hz Model for other European countries : 220 V — 230 V AC, 50/60 Hz Model for other countries : 110 V — 120 V or 220 — 240 V AC adjustable, 50/60 Hz
Power consumption	US model : 80 watts CND model : 90 watts Model for other countries : 100 watts
Dimensions	Approx. 225 x 330 x 320 mm (w/h/d) incl. projecting parts and controls (HCD-C50/C50U) Approx. 180 x 330 x 240 mm (w/h/d) (SS-M50E/M50N)
Weight	Approx. 3.5kg (SS-M50E) Approx. 3kg (SS-M50N) Model for Singapore : Approx. 9.1kg (HCD-C50) Model for other countries : Approx. 8.9kg (HCD-C50/C50U)
Supplied accessories	Remote Commander (1) Sony SUM-3 (NS) batteries (2) AM loop antenna (1) FM antenna (1) Speaker cord (2) (Except European countries)

Design and specifications subject to change without notice.

CND : Canadian Model
IT : Italian Model
G : German Model
EE : East European Model
EA : Saudi Arabia Model
AUS : Australian Model
SP : Singapore Model

PARTS LIST

NOTE :
- Items marked " * " are stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items

Ref.No.	Part No.	Description	Remark
	X-4944-066-1	HANDLE ASSY (E,EA,SP,PX)	
	1-467-179-11	COMMANDER, STANDARD (RM-S535)(EXCEPT US)	
	1-467-179-21	COMMANDER, STANDARD (RM-S535U)(US)	
	1-501-374-11	ANTENNA, LOOP	
	1-501-594-11	ANTENNA (FM) (AEP,UK,IT,G,EE)	
	1-557-954-21	CORD, SPEAKER CONNECTION (2.5m) (US,CND,E,EA,AUS,SP,PX)	
	3-372-531-01	SCREW, TRANSPORT	
	*3-703-079-21	LABEL (BACK), SUB CAUTION (UK)	
	3-703-710-41	STICKER, SONY SYMBOL (12)	
	*3-704-350-01	SHEET (STANDARD), PROTECTION	
	3-757-339-11	MANUAL, INSTRUCTION (ENGLISH)(AEP,UK,EE)	
	3-757-339-21	MANUAL, INSTRUCTION (ENGLISH,FRENCH)(US,CND)	
	3-757-339-41	MANUAL, INSTRUCTION (FRENCH,SPANISH,PORTUGUESE,DUTCH,SWEDISH)(AEP)	
	3-757-339-51	MANUAL, INSTRUCTION (GERMAN,ITALIAN)(AEP,IT,G)	
	3-757-339-61	MANUAL, INSTRUCTION (RUSSIAN,POLISH)(EE)	
	3-757-339-71	MANUAL, INSTRUCTION (DANISH,FINNISH)(EE)	
	3-757-339-81	MANUAL, INSTRUCTION (ENGLISH,FRENCH,SPANISH,CHINESE)(E,EA,AUS,SP,PX)	
	3-757-339-91	MANUAL, INSTRUCTION (ARABIC)(EA)	
	4-941-762-11	COVER (MLY), BATTERY (COMMANDER)	
	*4-961-658-01	CUSHION (L) (HCD-C50/C50U)	
	*4-961-659-01	CUSHION (R) (HCD-C50/C50U)	
	*4-961-660-01	INDIVIDUAL CARTON (E,EA,SP,PX)	
	*4-961-661-01	INDIVIDUAL CARTON (AUS)	
	*4-961-662-01	INDIVIDUAL CARTON (US,CND)	
	*4-961-663-01	INDIVIDUAL CARTON (AEP,UK,IT,G,EE)	
	*4-961-666-01	CUSHION (SS-M50E/M50N)	

MINI HI-FI COMPONENT SYSTEM

SONY®

English
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MICROFILM

9-959-094-11

Sony Corporation
Audio Group

HCD-C50/C50U

7042

SONY

SERVICE MANUAL

US Model
HCD-C50U
Canadian Model
AEP Model
UK Model
E Model
Australian Model
PX Model
HCD-C50

CORRECTION-1

Correct your service manual as shown below.

____ (Under line) : indicates corrected portion.

Page	INCORRECT				CORRECT			
	Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
110	IC402	8-759-605-00	IC M5F78M07L		IC402	8-759-604-86	IC M5F7807L	

(SPM-97003)

9-959-086-91

Sony Corporation
Home A&V Products Company

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